MIDWEST MARKETING ISSUE
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Producers Favor New Corn Program

End of Allotments Approved in Vote

WASHINGTON—Producers in the 26-state commercial corn-producing area voting in a referendum November 25 favored by 71.1% a new program calling for the elimination of corn acreage allotments and for a new method of setting support prices for the 1959 and succeeding crops.

Preliminary tabulation of the vote shows 246,702 voting for the new program and 100,274 voting for a continuation of the allotment program in effect on the 1958 crop. A simple majority of the 346,976 votes cast determined the program to be in effect.

Under the new program, there will be no restrictions on acreages planted to corn in 1959 and later years.

Price supports on a national average basis will be 90% of the preceding three-year average price received by producers for corn, but not less

(Turn to CORN PROGRAM, page 25)

USDA Estimates Aerial Dusting, Spraying Costs

WASHINGTON—The typical hourly cost of dusting or spraying crops from a 150-horsepower, two-seated plane is estimated to be $28.88, if the applicator uses his plane for 200 hours of flying time annually, and $24.14 if his flying time is 400 hours annually, a U.S. Department of Agriculture economist reports.

Melvin R. Janssen of USDA's Agricultural Research Service, who has been studying the costs of using aircraft as a farming aid, says hourly outlays for a 200-hour-a-year operator include $12.02 fixed costs and $16.86 for variable costs. The figures represent averages from information furnished by a number of aerial applicators.

The $12.02 hourly in fixed costs include $8.36 for equipment depreciation, $1.02 for taxes, $2.04 for interest and $.60 for hangar rental. The $16.86 in variable costs include $3.75

(Turn to DUSTING COSTS, page 8)

Talk on Salesmanship, Trade Show Highlight AAI Convention Opening

By LAWRENCE A. LONG
Editor of Croplife

CHICAGO—A talk on salesmanship, the showing of a time-lapse sound-and-color film, reports on progress made within the organization during the past year and the election of eight new members to its board of directors featured the opening day of the Agricultural Ammonia Institute's eighth annual meeting here Dec. 3.

A trade show exhibiting a full assortment of equipment and services connected with the anhydrous ammonia industry was well attended by the 400 persons registered for the convention at the Morrison Hotel.

A strong emphasis on salesmanship was made in a talk by Joseph E. Burger, director of public relations of H. V. Nootbaar & Co., Pasadena, Cal. He reminded that success in any enterprise requires the right products, methods and men. The product, he said, should be one of which its producer may be proud; the methods used should be modern; but the most important ingredient, he said, is that of the manpower in the organization. It is this factor that enables a firm to better its competition and to move out ahead.

Mr. Burger said that businesses operating successfully are those where everyone in the organization is selling. Indifference toward the buyer on the part of any employee is a serious matter, he warned, and declared that this factor can be responsible for the lose of many customers. He cited a recent analysis where as

(Turn to AAI, page 24)

Montrose Chemical Gets DDT Contract for Anti-Malaria Program

NEW YORK—Montrose Chemical Company of California, jointly owned by Stauffer Chemical Co. and Montrose Chemical Company of Newark, has been awarded a contract by General Services Administration to supply more than 11,000,000 lb. of DDT for the worldwide anti-malaria program of the International Cooperation Administration. Dollar value of the award to Montrose is approximately $2,800,000.

General Services Administration indicates that additional requirements for this program during the next few months will be in excess of the present purchase.

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Fairfield Chemical Acquires Powco

NEW YORK—The Fairfield Chemical Division, Food Machinery and Chemical Corp., has announced the acquisition of Powco inventories from the Olin Mathieson Chemical Corp., together with the Powco trademark.

Dr. Alfred Weed, heretofore with Olin Mathieson, will join the Fairfield staff as consultant and general assistant to John A. Rodda, manager of Fairfield chemicals.

USDA Entomologists Tell Society Members of Projects

SALT LAKE CITY—A large number of reports on research projects were presented at the annual meeting of the Entomological Society of America here Dec. 4. Scientists from all over the U.S. were present to give and hear papers.

Included among the papers read was a report on the effects of space travel on insects.

William N. Sullivan, Jr., and George E. Westlake, entomologists of the U.S. Department of Agriculture, said that insects, whirling under a constant pressure simulating 10 times the force of gravity, are developing and reproducing through several generations.

The experiments, at Beltsville, Md., with fruit flies, are being made to find whether there is any correlation between stresses of space flight and normal life processes, the scientists say.

To date, they have found that the time required to develop from eggs to adults is slightly longer for the spinning flies. The yield of adult insects from a given number of eggs was reduced by about 60%. It is considered remarkable that some 40%

(Turn to ENTOMOLOGIST, page 5)

World's Worst Fruit Pest

Insecticides Key in U.S. Elimination of Medfly

WASHINGTON—About one year ago field workers of the U.S. Department of Agriculture and the Florida State Plant Board trapped the last Mediterranean fruit fly in the U.S. in Manatee County, Fla. Since that date a comprehensive trapping program has been continued to make sure the Medfly has not survived in some isolated section of Florida, the only state in which it was found in 1956 and 1957. Not a single Medfly has been trapped.

Entomologists term the Medfly the world's worst fruit pest. It also attacks many vegetables. During the period April 13, 1956, to Nov. 26, 1957, it not only menaced Florida's $400 million annual fruit and vegetable crops but also those across the southern half of the nation.

The Medfly invasion began, entomologists believe, when the pest sneaked into Florida in baggage arriving at a Miami area water port or airfield. It was first discovered by a Miami home owner, infesting his backyard grapefruit trees. The pest was identified promptly and within 10 days a full-scale attack was under way. State quarantines were invoked and road blocks set up to prevent spread of infestation through movement of products.

Survey teams of trained inspectors searched out affected areas and measured the size and intensity of each infestation. These early surveys showed the Medfly to be infesting a thousand-square-mile strip along the southeastern Florida coast. Accelerated surveys and trapping operations quickly revealed its presence on the Florida west coast and in central Florida—the main citrus producing area of the state.

By April 30, just 17 days after the pest was first reported, the heaviest infestations were under spray treatment with ground equipment and on May 18 with small airplanes. By June 15 aerial spraying had begun over metropolitan areas with multi-engined aircraft.

At the height of the program scores of aircraft were used to lay down a bait spray newly developed by the department's Agricultural Research Service scientists. This program was surrounded by appropriate safeguards so that man, animals, fish and wildlife were effectively protected.

During the month of July, 1956, at the height of the aerial spray operations, almost 1.5 million acres were treated. By late March, 1957 about 650,000 acres had been treated one or more times for a total of some 6½ million acres. Over 46,000 traps baited with a USDA research-developed attractant were in operation to keep count of the diminishing fly populations and to spot new infestations.

By the end of June, 1957, intensive trapping indicated the insect

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AN INQUIRY

Does Chemical Control Research Work Ignore Agronomic Values of Fertilizer?

By VINCENT SAUCHELLI
National Plant Food Institute

The fertilizer control laws are designed primarily to protect consumers and, indirectly, honest manufacturers. All reputable manufacturers are anxious to assist the control officials in their efforts to improve sampling and analytical techniques because they want a system that promptly and efficiently differentiates between honest and somewhat dishonest or sloppy practice. At the same time they are inclined to hold out against the attempt to secure a level of homogeneity in the product which makes sampling easy but which puts a cost burden on the farmer out of proportion to its value.

In the past, the agronomy factor has perhaps been ignored or subordinated unduly in planning chemical control research. A farmer receiving a report from the state chemist that the fertilizer he purchased was, let us say, deficient in one nutrient by a small margin below the official tolerance limit, does not always evaluate this information agronomically.

The report may cause him to doubt the ethics of the fertilizer manufacturer solely on the basis of the adverse report. He does not consider the important fact that the fertilizer he purchased could be entirely satisfactory for making the crop and that despite the deficiency reported by the chemist the fertilizer was in reality an honest value.

Let it be emphasized strongly, we hold no brief for dishonest measure or sloppy practices. A purchaser is entitled to get what he is paying for. The point we are making is that, for example, a guaranteed analysis of 5-10-10, which is found to analyze 4.9-10.6-9.6, may be accepted as honest value from an agronomic or crop-producing viewpoint. The deficient fertilizer in this case would presumably produce the crop equally effectively as one with the exact 5-10-10 analysis.

We know that some agronomists and control officials wonder whether segregation as it frequently occurs in a fertilizer and is reflected in an aberration from the exact chemical analysis, may not be stressed unduly as to its effect on making the crop. The money penalty imposed on the manufacturer for the deficiency, while appreciable, may be less important than the unfavorable effect the report has on the public relations of the manufacturer. How tolerant should the control official be? This is indeed one of the most difficult problems facing the industry and the state regulatory office.

In Florida, a joint research program went far to alleviate the problems. The study proved beyond doubt that the official method of analyzing the X-O-X type of fertilizer was inadequate to the purpose. The authorities graciously accepted the results and adopted a different set of tolerances which are more realistic and fairer to the interests of the manufacturer.

These problems of analysis and their relation to corresponding effects on the growing crop are not confined to our country. European control officials and agricultural leaders have been trying to resolve them, too.

One of the best statements on the subject is the following which was written by Dr. E. M. Crowther, shortly before his death. Dr. Crowther was at the time director of Rothamsted Agricultural Experiment Station in England, the oldest institution of its kind in the world, founded by Sir John Lawes, the pioneer manufacturer of superphosphate. Wrote Dr. Crowther:

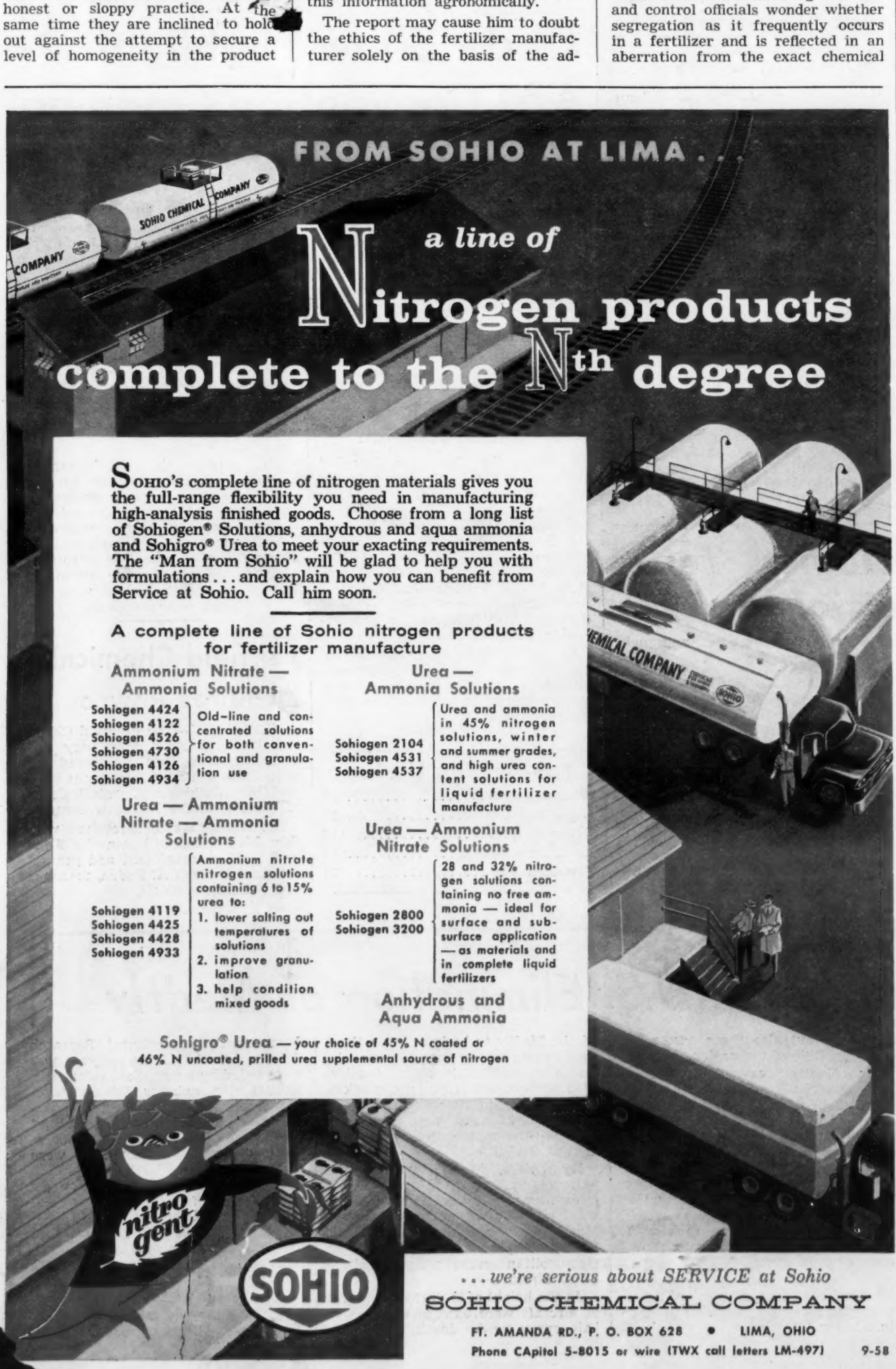
"Why do we trouble to analyze phosphate fertilizers? The manufacturer needs analyses of his raw materials and intermediate batches to control the operations in his factory. Even relatively small differences will allow him to make appropriate adjustments. The farmer's need is quite different. No practical observation and no field experiment can distinguish between say a 16% and an 18% superphosphate applied to field crop. Fine distinctions in grade or total plant food content are in fact of little agricultural importance.

"The essential thing is to know where, when and how the fertilizer should be used. When the Acts were first framed it may have been necessary to protect the farmer against a few unscrupulous or incompetent traders. This need may still remain, but it seems most important not to confuse this 'policing' aspect of fertilizer analysis with the far more important one of providing the farmer and his advisers with the technical information needed for using fertilizers well.

"This may require something more than a single analytical figure by a conventional method. Thus, with basic slags or mineral phosphates, it is more important to know the kind and origin of the material than the total phosphorus content! In countries such as Holland and Denmark where farmers buy only straight or single fertilizers the difficulties can be overcome by laying down rigid specifications for each class of fertilizer and prohibiting the sale of substandard materials.

"The farmer, analyst and manufacturer may perhaps sum up their needs by saying that they look to the soil chemist to give them good methods for estimating the amount of available phosphoric acid in fertilizers. Indeed, the American fertilizer trade is carried out almost exclusively in terms of the so-called 'available phosphoric acid.'

"I personally hope that this expression will not be introduced into British practice, because it has erroneous implications. The amount of the fertilizer phosphorus actually available to a crop depends not only on its conventional solubility but on a host of other factors. It will vary with the kind of soil and crop, the weather, the method, time of application and so on. Non-committed terms such as 'readily soluble,' 'water-soluble,' 'citric-soluble' or 'citrate-soluble'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are much to be preferred to the ambiguous term 'available.'

"Although it would be convenient to have a universal method of analysis for measuring 'readily soluble' fractions there is considerable risk in treating any test too rigidly. The neutral ammonium citrate method used in the U.S. until 1931 appeared to be weighed against the ammoniated superphosphates which were then being made in rapidly increasing amounts. The method was reviewed and modified.

"There are certainly conditions in which conventional analytical methods introduced for specific purposes may become antiquated and prove an obstacle to progress. Useful as the water solubility test may be as a check on the efficiency of making superphosphate, there is an urgent need for one or more alternative methods to estimate the readily soluble phosphate in other kinds of fertilizer.

"The main difficulty in improving analytical methods and in introducing new kinds of fertilizer is the lack of a sufficient body of data on the relative values of various kinds of phosphate fertilizer over a range of agricultural conditions Most of the American experience seems to have been limited to pot experiments. Far more field experiments are needed in this country on alternative kinds of fertilizers and especially on their residual effects.

"Comparisons are also needed to compare occasional heavy dressings against frequent small dressings suitably timed and placed. The main object of fertilizer analysis should be to help farmers to get the right sort and the amount of fertilizer in the right place at the right time. The precise strength of the fertilizer may be of quite secondary importance."

Geigy Forms Sales Development Department

Geigy Agricultural Chemicals, division of Geigy Chemical Corp., announced the formation of a sales development department under the direction of J. J. Hood, formerly assistant sales manager. Also assigned to the department are Leo Miles and David Whitlow.

In addition to rendering technical service on all Geigy agricultural chemicals, the department will also be responsible for the development of markets for new pesticides resulting from Geigy's research, as well as the development of new uses for those Geigy agricultural chemicals now commercially available.

Chicago Steel Tank Adopts New Name

CHICAGO — Solar Chicago, division of U.S. Industries, Inc., is the new name for Chicago Steel Tank Co., division of U.S. Industries, Inc. Announcement of the change was made by John I. Snyder, Jr., board chairman and president of U.S. Industries, Inc.

Mr. Snyder said that the Chicago Steel Tank name, in use since the company was founded in 1899, had become misleading. He explained that it referred specifically to just one product line of the company—standard storage tanks.

TOPS IN CORN

FT. MORGAN, COLO.—A corn yield of 222.1 bu. an acre was recorded by Dale Richardson, a 38-year-old Morgan County farmer. Mr. Richardson's five-acre plot of Pioneer Hybrid corn was entered in the annual Morgan County "200 Bushel Corn Club" and this is the first time anyone has broken the 200 bu. barrier since the club was organized in 1955. Sponsors of the contest included fertilizer and seed corn dealers in the county, the Burlington Railroad and the county extension service.

Maryland Borers At Three-Year High

COLLEGE PARK, MD.—For the first time in three years, the population of corn borers has increased in Maryland, according to a recently completed statewide survey. The survey was made by Wallace C. Harding, Jr., extension entomologist of the University of Maryland college of agriculture.

The state average for this fall is 94 borers per 100 cornstalks—almost a borer for each cornstalk in the state. This compares to 60 borers per 100 plants in 1957, and 78 in '56.

"This fall there were six counties with over 100 borers per 100 plants, which we consider to be a heavy population," Mr. Harding said.

All of the heavily infested counties are located on the eastern shore, particularly the lower shore.

For next year, Mr. Harding predicted there is a heavy enough carryover of corn borers—particularly on the eastern shore—to cause quite a bit of trouble next spring to corn, potatoes and wheat, if weather conditions and other factors are favorable for borer development.

Since corn borers overwinter as larvae in cornstalks, the best and most practical way to control this insect is to plow under the cornstalks, Mr. Harding said. This will kill borers, as they cannot emerge and develop once they are underground. On the eastern shore, cornstalks should be plowed under by April 15. For the remainder of the state, plowing should be completed by May 1, at the latest, Mr. Harding said.

FLORIDA FERTILIZER SALES

TALLAHASSEE, FLA. — Sales of mixed fertilizer in Florida during October amounted to 125,522 tons, reported Nathan Mayo, commissioner, Florida Department of Agriculture.

Texas Gulf Sulphur Elects Three New Board Members

HOUSTON—Election of three new members to the board of directors of Texas Gulf Sulphur Co. was announced by Fred M. Nelson, chairman, at the annual meeting here.

The new members are Allan Shivers, former governor of Texas; Leslie M. Cassidy, formerly chairman and president of Johns-Manville Corp.; and John A. Hill, president of Air Reduction Co., Inc.

Earnings of Texas Gulf Sulphur Co. for the year 1958 should be in the neighborhood of $1.30 to $1.35 per common share, Mr. Nelson disclosed. This would compare with earnings of $1.75 per share in 1957.

Mr. Nelson estimated that earnings for the last quarter will about equal the average of the earlier 1958 quarters and that earnings for the entire year will be approximately $13,000,000 as compared to $17,557,369 or $1.75 per share a year ago.

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Mid-South Farmers Keep Busy Harvesting: Force Slowdown in Fertilization Activity

MEMPHIS — The generally excellent weather conditions over the Mid-South in recent weeks have kept farmers so busy harvesting crops that they haven't had time to turn their attention to fall crops and pastures. This, according to a survey of fertilizer dealers and manufacturers and county agents, has resulted in slower sales of fertilizer.

A. Brown Beasley, agronomist for the Spencer Chemical Co., said that fertilizer tonnage for July-September in Kentucky and Arkansas was down slightly from last year. However, a pickup was noted in October which pulled tonnage movement up to near last season's figures.

The Spencer agronomist noted fall buying of nitrates by dealers and manufacturers because of discount prices but he doubts that much has moved into the hands of farmers. "The excellent fall harvest weather probably is keeping farmers busy in the field," he said. "Therefore, they have not had the opportunity to make their fertilizer purchases. In addition, the dry fall has delayed the planting of small grains and fall seeded pastures."

Hobson Vandiver, general manager of the Mid-South Supply Assn., Memphis, also pointed to the good fall weather as a reason for slower fall fertilizer sales. However, Mr. Vandiver said that some increased buying has been recorded in recent weeks and that he expects a general increase soon.

He said that there had been a definite increase in fall fertilization until about a year ago when the trend leveled off. Mr. Vandiver blames this on a slackening of advertising and educational programs on the advantages of fertilizing small grains and pastures during the fall months.

Several county agents in northern Mississippi reported increases in fall fertilization of pastures in their counties. They said farmers have increased dairying activities to supply the Memphis milkshed and that fall fertilized pastures are needed for grazing.

Leroy Thomas, associate county agent for DeSoto County, said fall fertilization definitely is on the increase. High rates of nitrogen are used to get grass started for early grazing. Most of the nitrogen is applied in solid form, but anhydrous and liquid forms are gaining popularity. He said that three to four tons of lime are used in establishing permanent pastures.

George Rone, Tate County agent, stated that fall pasture fertilization was on the upswing in his county because of increased dairying activities. He also pointed out that more farmers are engaged in improving permanent pastures and therefore are using more fertilizer on them. Mr. Rone said that most farmers in his county used regular mixed fertilizers high in nitrogen and phosphate for pasture fertilization.

At Como, Miss., farm supply dealer Leland Herring reported an overall increase in fertilizer sales this year. "This," he said, "is due to the soil bank, and farmers are continually trying to produce more on less acres." Mr. Herring noted a significant increase in lime tonnage but reported little interest in fall pasture fertilization in his area.

An official of the M. P. Moore Co., Senatobia, Miss., also noted an increase in liming. A 5% gain in sales of insecticides was reported over last year as well as a movement toward early season control of insects. Fertilizer sales were 5 to 10% ahead of last season, with an increase chalked up in the use of nitrate of soda.

W. H. Callison, president of the J. Callison Co., Bald Knob, Ark., said there had been little fall fertilization in his area this year. However, Mr. Callison said that there has been an increase in over-all fertilization with farmers moving toward higher analysis materials. He said that the University of Arkansas educational program on soil testing and increased emphasis on proper fertilization by county agents was responsible for this trend.

Texas Farmer Leads Way In Grassland Fertilization

LLANO, TEXAS—Because of an experiment on the farm of James Epperson, land owners in this area may start fertilizing their grass crops. Previously cotton had been about the only crop to receive fertilizer.

Mr. Epperson applied 90 lb. of ammonium nitrate per acre to weeping lovegrass, while part of the crop was not treated. On the fertilized part the yield was 2,500 lb. per acre. The other plot made only 500 lb. of grass.

The fertilizer cost $4 per acre, with the application costs running another $1.50 per acre. The extra ton of hay was worth at least $20, so the net profit from the fertilizer was $14.50 per acre.

COLORFUL COAT CATCHES CRAFTY CULPRIT

PLAINVIEW, TEXAS—Farmers who have been unable to identify bindweed can now recognize it without difficulty. As the light freezes turn other vegetation brown, the bindweeds show up as green spots in the field. And there are a lot more green spots than most farmers imagined. The Hale County Noxious Weed Control District is trying to do something about the spread of field bindweed, or possession vine, while there is still time, according to Archie Martin, supervisor of the district. Mr. Martin says chemical control can be obtained without spending a fortune. In fact, his organization is cooperating both technically and financially with the Hale County Commissioners' Court, the State Highway Dept., railroads, government and state agricultural agencies and several chemical companies. Bindweed was almost unknown in West Texas a few years ago, but has spread rapidly during the last decade. Now newer and lower cost chemicals make it possible for farmers to rid their fields of bindweed.

New Mexico 'E-Men' Put 19 Offenders On 'Wanted' List

STATE COLLEGE, N.M.—Like the G-Men and their "Ten Most Wanted Criminals" list, New Mexico's E-Men —that is, entomologists—have listed the 19 most destructive insect pests in the state in 1958.

In order of importance, the crop and forest insects were: Heliothis zea (corn earworm, cotton bollworm); lygus bugs; spider mites; grasshoppers; aphids; codling moth; southwestern corn borer; cabbage looper; spruce budworm; and beet leafhopper.

Worst household and barn pests, injurious to men and animals, were: hornflies; mosquitoes; cockroaches; cattle grub; screwworm; silverfish; nose bots; stored grain pests; and black widow spiders.

The cotton bollworm was kept under control in most areas, reports Dr. Gerald Nielsen, survey entomologist for the New Mexico Department of Agriculture. But several severe infestations damaged cotton in the Animas Valley and Deming area. Early plantings of corn were heavily damaged by this insect and later plantings averaged from 60 to 90% infested.

Lygus bugs began to build up in alfalfa fields in eastern and southern counties during March. The heavy infestations were big factors in reducing alfalfa seed yields. Spider mites were most serious in the apple orchards of Rio Arriba, Sandoval and San Juan counties.

New Mexico had a general increase in grasshopper populations this past year compared to 1957, especially on rangeland in all counties on the east side of the state. The range infestations, however, did not reach serious proportions except in a few areas. An increase in cropland infestations was noted in the irrigated area along the Rio Grande in Valencia, Bernalillo and Sandoval counties. The 1958 adult grasshopper survey shows that there are "threatening" to "severe" infestations on 23,200 acres of cropland and 782,620 acres of rangeland in 15 counties.

Insects were a major factor in the reduction of yields of tomato fields in Luna and Lea counties from an average of 16 tons in past years to about four tons per acre this season.

A detailed summary of insect conditions in New Mexico in 1958 may be obtained by writing to John J. Durkin, extension entomologist, New Mexico A&M College, State College, N.M.

NPFI Honors Top Agricultural Writers

CHICAGO — Robert G. Rupp, associate editor of The Farmer, St. Paul, Minn., and the staff of The Southern Planter, Richmond, Va., were honored recently as the nation's outstanding agricultural writers who most effectively have carried messages of soil building to their farm magazine readers.

The Soil Builders Award for Editors plaques were presented by the National Plant Food Institute, at the annual meeting of the American Agricultural Editors' Assn., at The Conrad Hilton Hotel, in Chicago, Dec. 3.

Mr. Rupp was honored as the winning writer among magazines with less than 300,000 circulation and Dr. Paul D. Sanders, editor of The Southern Planter, receiving the award on behalf of his staff, winner in the category of magazines with more than 300,000 circulation.

NPFI annually sponsors the award in a nationwide contest in cooperation with the association. Louis H. Wilson, secretary and director of information for NPFI, made the presentation.

CONFERENCE PARTICIPANTS (photo at left) give close scrutiny to the annual pesticide manual distributed at the Rutgers Pesticide Dealers' Conference at Rutgers University, New Brunswick, N.J. (See story in Dec. 1 issue of Croplife) They are (left to right): C. E. Wilson, Jr., Grasseli chemical department, E. I. duPont de Nemours & Co., Wynnewood, Pa.; Arley M. Hovland, associate agricultural extension leader at Rutgers who presided at one session; and John A. O'Brien, California Packing Co., Swedesboro, N.J. In the photo at right, the chow line forms with Charles H. Tidwell, Corona chemical division, Pittsburgh Plate Glass Co., in the front. Following him are F. R. Anspach, Dixon Chemicals, Paulsboro, N.J.; Cyril Sanders, Agricultural Research Service Plant Pest Control, Trenton, N.J.; Dr. William E. Collins, Rutgers extension entomologist and chairman of one session; and Mr. Hovland.

ENTOMOLOGIST

(Continued from page 1)

can survive this sustained pressure for weeks and still reproduce normally.

The researchers reared the flies through two generations in a centrifuge revolving at 240 r.p.m. on a 6-in. radius. At this speed, the centrifuge simulated gravitational pressure on the insects 10 times more than normal. This approximated a space vehicle's launching acceleration when a man weighs 10 times as much as at normal pressure and is apt to black out.

The insects are reared in a lighted windowless room that can be darkened to permit observations by use of a strobe unit. This unit flashes on and off in synchronization with the whirling test tubes. To the human eye, the tubes seem to stand still, permitting close observation of the flies' activities.

The fruit fly (Drosophila melanogaster) was used in these tests because its genetics are widely known, it has a short life cycle, and it can be reared easily in a test tube. From results of the three tests conducted, it appears that this fly is highly suited for use in space biology studies under conditions where temperature and oxygen-carbon dioxide balance can be maintained.

Another report said male mosquitoes, made sterile by irradiation with Cobalt-60, have proved experimentally effective in reducing laboratory populations of a malaria-carrying type.

Successful eradication in 1955 of the screwworm from the island of Curacao by release of irradiated male screwworm flies encouraged laboratory research of the same control method on Anopheles quadrimaculatus, one of the malaria-carrying mosquitoes.

Control amounting to about 80% under laboratory conditions was revealed by scientists A. N. Davis, J. B. Gahan, Donald E. Weidhaas, and Carroll N. Smith, of USDA's Agricultural Research Service. The scientists conducted their experiments at Orlando, Fla., using laboratory-reared mosquitoes known to be free of malaria.

Speaking for himself and his coworkers, Mr. Davis reported that the method holds promise as a control against some of the world's numerous malaria-carrying species, and may be useful in combination with other control methods.

"Considerable effort," he said, "is devoted to anti-malarial campaigns. In this connection, irradiated, malaria-free mosquitoes might be released to apply the final blow to a population already depleted by other control measures." In such cases, the new method might get survivors that could not be eradicated by any other means.

Mr. Davis reported that the tests were made to determine the effect of various proportions of sterilized males released in normal populations of Anopheles quadrimaculatus. Sterilization was accomplished by exposing day-old mosquito pupae to 11,820 roentgens of gamma irradiation obtained from Cobalt-60.

Preliminary experiments showed that irradiated females laid no eggs after mating with normal males. They also showed that normal females mated to irradiated males produced normal numbers of eggs but none hatched.

Experiments were then made to determine the numbers of irradiated males needed for effective control in normal mosquito populations. The most striking results were obtained in these tests when six to 10 irradiated males were released per normal female and male. Under these conditions both the number and fertility of eggs were reduced, amounting to an 80% reduction in terms of viable eggs.

When ratios were cut to only four irradiated males to one normal female and male, however, egg production was at or above normal. And while fertility was slightly reduced, there was usually no reduction in the number of viable eggs.

Mr. Davis indicated that practical use of irradiated male mosquitoes as a control measure poses problems of cost, labor, and methods of large-scale rearing and irradiation.

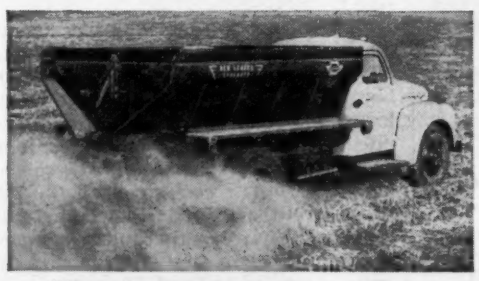
Mass-rearing and irradiation techniques, he believes, probably could be developed on the basis of the laboratory procedures now known for some species.

Over-all practicality, he said, would depend on the size of the area to be treated, abundance of normal mosquitoes, importance of obtaining complete eradication, and financial resources available.

Adolph R. Roth and James W. Eddy, more USDA entomologists, told

(Turn to ENTOMOLOGIST, page 8)

L-42S NEW LEADER Mobile Blender



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is a high quality rig with a low price tag!

Cut your in-the-field costs with this simple to operate, easy to maintain spreader. Merely set the feedgate opening, start the truck, engage the PTO and start spreading! Material is delivered to the twin spinners over a wide 24" conveyor. Also available with a center dump for stock piling and windrowing.

NEW LEADER *Engine-driven* Spreaders: Model L-52S with 24" conveyor is built for widespread use. Model L-62S with a 30" conveyor is for extra heavy, widespread lime applications. Both spreaders can also be used for fertilizer.

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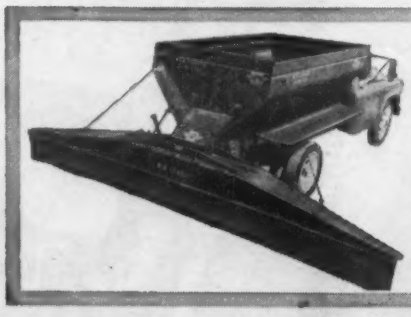
Three separate feedgates, each with a test box for accurate metering, control the amount of spread. The driver can change the fertilizer ratio for varying soil conditions while in the field! Now, you can spread 3 kinds of fertilizer in one pass through the field . . . whereas, before it took 3 separate trips to do the job! A 7 h.p. gasoline engine drives the twin spinners at a constant rate, regardless of truck speed. The 36" belt-over-chain conveyor is powered from a drive-shaft drive synchronized to truck speed . . . for precise per-acre requirements. Optional equipment meters herbicides and insecticides into the fertilizer . . . spreads all three at once.

A *Powered Flow-Divider* assures even distribution of materials to both spinners, regardless of the position of the L-42S on hillsides or level ground. Customers appreciate this feature as it results in an even crop growth throughout the field.



Model L-19S Combination Spreader With PTO Drive, 24" Conveyor and Twin Spinners Delivers Fast, Uniform Spreads!

Simple operation saves time and upkeep. Just set the feedgate opening . . . start the truck engine . . . engage the PTO . . . start spreading! The body has 45° angle sides to prevent bridging—heavily reinforced to stop warp and twist—extended 6" higher to hold bigger payloads with less blowing.

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Farm Tests Show 75% of California's Grainland Will Respond to Fertilizer

SACRAMENTO — Results of 250 cereal grain fertilization trials made by farmers, farm advisers and University of California specialists indicate that about three fourths of the state's grainlands will respond to fertilizer.

John H. Lindt, Sutter County farm adviser, in a review of grain fertilization facts, said 25% of the trials showed no response, 33% responded to nitrogen alone, 15% to phosphate alone and 27% to nitrogen plus phosphorus.

As grain soils are farmed for longer periods of years, Mr. Lindt said, the probability of phosphorus deficiencies will increase. He recommended that farmers test every five or six years with a strip of nitrogen and phosphorus fertilizer across their fields.

Phosphate fertilizer should be in the soil at planting time, preferably drilled near the seed, he added. It should not be plowed in or placed in contact with seed.

Nitrogen, which leaches much more readily than phosphorus, should be applied according to rainfall. Heavy early rains indicate that some nitrogen should be saved for later application. Temperature and soil depth also are important in nitrogen application.

Results of experiments with aqua ammonia, ammonium sulphate and ammonium nitrate have shown that not only the rate of nitrification but also the elapsed time before the maximum rate is attained depends on the ammonia level in the soil. The fact that ammonia fertilizers often are applied in bands of very high intensity affects the action of nitrifying bacteria.

The tests showed that in both acid and calcareous soils commercial rates of application result in more rapid nitrification of aqua ammonium, with ammonium sulphate second and ammonium nitrate slowest. At high rates in calcareous clay soils, part of the ammonia was converted to nitrite instead of nitrate. Nitrites are toxic in relatively small amounts but less so in alkaline soils.

Western Agricultural Chemicals Meeting Set

SANTA BARBARA, CAL. — The spring meeting of Western Agricultural Chemicals Assn. will be held in the Hotel Miramar, here March 17, 1959, announced C. O. Barnard, executive secretary.

The forenoon session will be devoted to discussions of only the newest products of the basic pesticide producers by technical representatives of the participating companies. Each panel speaker will be limited to eight minutes.

Dr. A. M. Boyce, director of citrus experiment station of the University of California, will be the moderator, Mr. Barnard said.

The after-luncheon speakers will be Dr. R. L. Metcalf, chairman, department of entomology, citrus experiment station and Dr. George B. Alcorn, director of extension services, University of California at Berkeley.

Robert P. Malcolmnson

JOINS STAUFFER—Robert P. Malcolmnson has joined Stauffer Chemical Co. as technical sales representative, agricultural chemicals division with headquarters at Holton, Mich. He will provide technical service to Stauffer's dealers and distributors in the state of Michigan and maintain liaison with experiment stations. Mr. Malcolmnson holds a bachelor's degree in agricultural mechanics from Michigan State College and a master's degree in agricultural extension. He has also been associated with the Soil Conservation Service and has taught vocational agriculture.

TVA Announces Intensified Tree Research Program to Determine Fertilization Value

KNOXVILLE, TENN. — Tennessee Valley Authority reports it has intensified its basic research studies on "tree nutrition," the objectives of which are to determine under what conditions fertilization of forest trees is economical, what fertilizers are best to use, and how to apply them.

Richard Kilbourne, director of TVA's forestry relations division, said that if foresters, chemical engineers, and agricultural economists can find affirmative answers to these questions, considerable benefits will be in prospect for producers of tree seedlings, timber growers, users of forest products, and by fertilizer manufacturers.

The decision to move forward into this field came after an analysis of preliminary tests TVA has been carrying on for a number of years, which showed encouraging but not conclusive results.

"These preliminary tests show questionable benefits from fertilizing pines at time of planting," Mr. Kilbourne said. "In four out of five black locust planting tests, a phosphate application improved growth for as long as five years. Fertilization of grafted black walnut trees gave conflicting results. Nitrogen-fed dogwood trees in a mixed hardwood stand responded favorably over a four-year period. In some cases, fertilized crop trees in thinned pine stands responded well, with and without pruning. Some of our data has not yet been completely analyzed.

"We now are going to concentrate on the tree species most frequently used in reforestation. This means the southern pines and eastern white pine. The principal areas of investigation will include producing seedlings in nurseries, establishing new stands by planting, producing seed in orchards or other seed production areas, producing wood, and controlling insects and disease."

Hooker Chemical Names New Plant Engineer

NIAGARA FALLS, N.Y. — Victor M. Morgan has been named plant engineer of the Columbia, Tenn., plant of the phosphorus division, Hooker Chemical Corp., it is announced by Oscar D. Crosby, general production manager of the division. Mr. Morgan succeeds Theodore T. Garrett who was recently promoted to works manager of the Columbia plant.

Formerly an area engineer at Hooker's Niagara Falls, N.Y., plant since November, 1957, Mr. Morgan joined the company in 1950 as a chemical engineer. He was named maintenance engineer in January, 1953, sales production coordinator in June of that year, and chemical salesman in the Chicago district in 1954. He returned to the operations department at the Niagara Falls plant in July, 1956.

Program Plans Outlined For Ohio Conference

COLUMBUS, OHIO—An agronomist from Pennsylvania State University, a director of the National Plant Food Institute, and a manager of the American Potash Institute will speak at Ohio's Fertilizer and Lime Conference Dec. 12 at Ohio State University, here. Sessions will be in the conference theater of the Ohio Union.

James H. Eakin, Jr., extension agronomist at Pennsylvania State, will discuss principles involved in liming; Zenas H. Beers, regional director of the National Plant Food Institute, Chicago, will talk about farmers' attitudes toward the use of fertilizer, and Werner L. Nelson, Midwest manager of the American Potash Institute, West Lafayette, Ind., will present pointers on safe and efficient fertilizer placement.

In other program features, E. O. McLean, agronomist at Ohio State, will discuss factors affecting the availability of nutrients from commercial sources and a panel of agronomists from the university and the Ohio Agricultural Experiment Station will present highlights of agronomic research in Ohio.

The Ohio Soil Fertility Education Society will conduct its annual meeting at the close of the program. The conference is being conducted by the department of agronomy and Agricultural Extension Service of Ohio State.

Gates Rubber to Build New Plant in Nashville

DENVER—The Gates Rubber Co. will start construction immediately of a $9 million manufacturing plant in Nashville, Tenn., Charles C. Gates, company president, has announced.

Although the Nashville plant will be equipped initially for the production of tires and retread material, an early addition of other products is expected, Mr. Gates said. Among its current products are rubber-lined tanks for fertilizer solutions.

FERTILIZER PLANT TOUR—Nine Latin American students toured recently the Olin Mathieson Chemical Corp.'s fertilizer plant in Pasadena, Texas. Their trip of six months to this country was sponsored by the National 4-H Foundation, Washington, D.C., through the cooperation of Olin Mathieson. The exchange students have been learning technical agriculture while in the U.S. Left to right are Marco Aurelio Ariza, Guatemala; Alejandro Rodriguez, Honduras; Joe Gibbs, plant superintendent for Olin Mathieson; and Luis M. Cuadra, Nicaragua.

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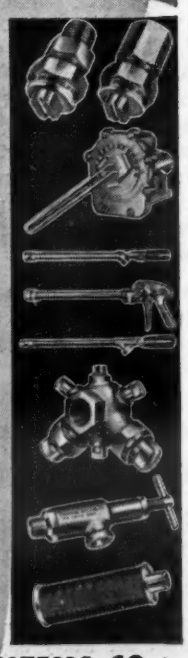

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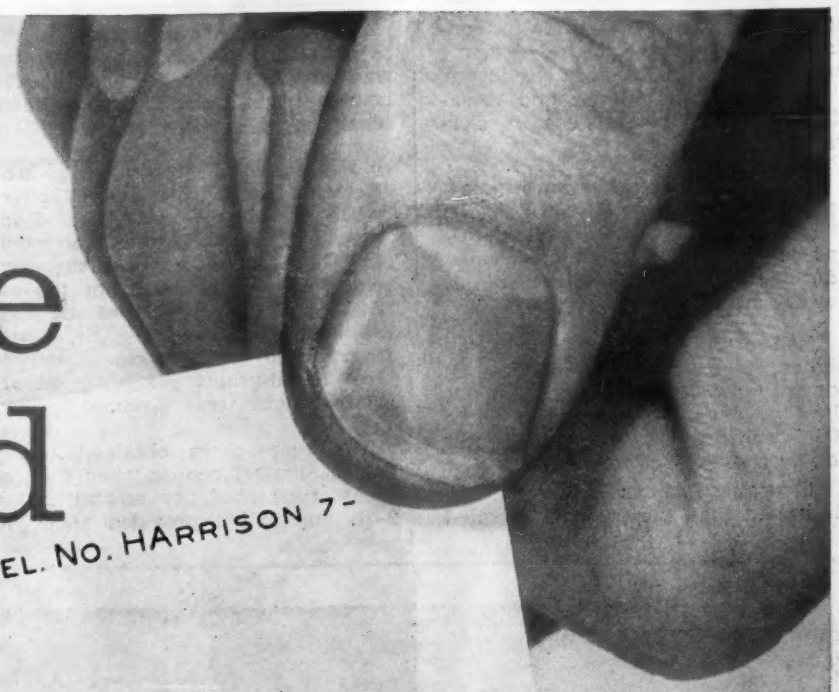

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ENTOMOLOGIST

(Continued from page 5)

of a new systemic insecticide for control of cattle grubs, cause of heavy annual losses to livestock producers, that has shown promise and versatility in experimental use at Corvallis, Ore.

The new chemical is an organophosphorus compound known chemically as (O-(4-tert-butyl-2-chlorophenyl)O-methyl methylphoramidothioate). It can be administered either orally or as a spray.

Used orally, the chemical at the highest test dosages used provided control amounting to 94 to 100%. Used as a spray, it provided 99 to 100% control. The chemical is not yet available to cattlemen.

Discussing findings of the test, Mr. Roth said that one previously tested chemical had proved effective only as an oral treatment while another was effective only as a spray. The new chemical, he said, gave excellent results used in either manner.

Experimental treatments, Mr. Roth explained, were most effective when the dosage administered in bolus or capsule forms amounted to 20 or 25 milligrams of the new chemical to each kilogram (about 2.2 lb.) of body weight of the test animals. Results were fair, however, when oral dosages of only 4 to 15 milligrams per kilogram of body weight were given.

The researchers obtained nearly perfect control results when 4 qt. of spray were used per animal, but a 2-qt. application provided about 70 to 80% control. The spray formulation included a wettable powder containing 0.75% active material. Sprays were applied under an operating pressure of 250 to 300 lb.

Hereford yearlings weighing 400 to 500 lb. were used in the experiments. They were treated in the fall of 1957 and examined for grubs last February, March, April, and May. The grubs, Hypoderma lineatum, normally appear largely in March. Those appearing in April were mainly of the H. boris species.

The test animals were selected at random and ear-tagged. They were not separated from the animals used as controls.

In addition to the Hereford yearlings used in the test, all of which were treated before the grubs appeared, a single grub-infested yearling Guernsey steer was treated orally with the 25-milligram dosage after grubs were visible on the animal's back. The animal was infested with 22 encysted second and third-instar larvae, all of which were dead 14 days after treatment.

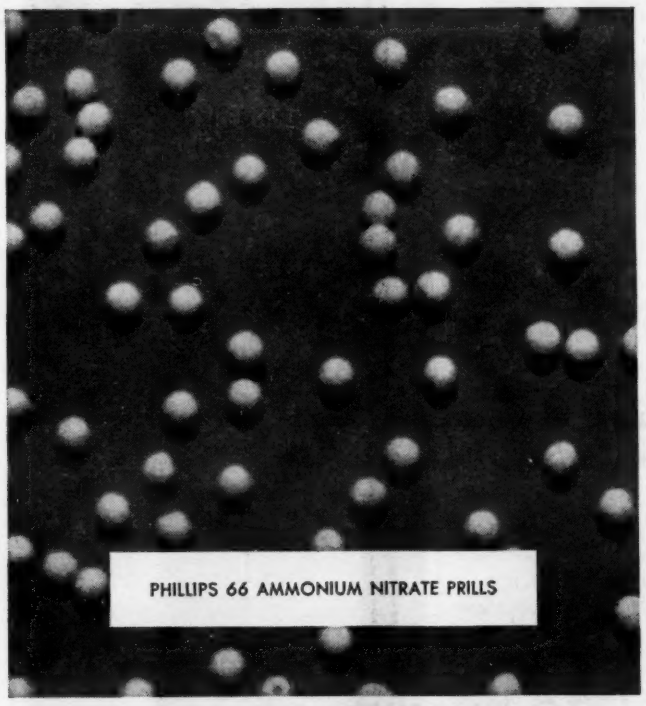
The salt-marsh sand fly, vicious biting insect pest of Florida's east coast, is showing resistance to several insecticides that once provided excellent control, reported Dr. Carroll N. Smith, USDA entomologist.

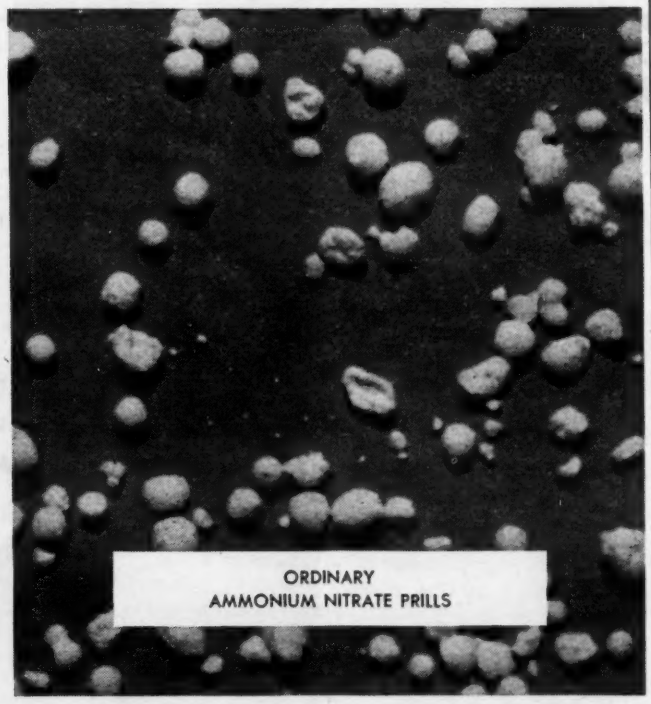
Dr. Smith was aided in the tests by A. Nelson Davis, Jr., and Donald E. Weidhaas of the Agricultural Research Service, and E. L. Seabrook, of the Palm Beach County Mosquito Department.

The salt-marsh sand fly (Culicoides furens), Dr. Smith explained, breeds throughout the year in the moist soil of Florida's east coast tidal marshes. Capable of migrating several miles, the adult flies viciously attack and bite people. Their presence has often discouraged tourists and hindered economic development of coastal areas, Dr. Smith said.

Early efforts to control sand flies included the ditching, diking, and pumping of tidal marshes, he explained. These efforts, which began in 1935, proved fairly effective in some areas, but were of doubtful value in others.

Aerial and ground spraying or fogging—attempted later—provided only temporary relief from adult flies and reinfestations followed, usually in a few hours or a few days.





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DUSTING COSTS

(Continued from page 1)

for fuel and oil, $5 for the pilot, $4.15 for regular maintenance and damage, $3.50 for the ground crew and $.46 for liability insurance.

If the applicator can expand to 400 hours of work a year his fixed costs would be: $6.12 for depreciation, $.51 for taxes, $1.02 for interest and $.30 for hangar rental. The per hour costs for such variables as fuel and oil, the pilot and maintenance and damage are the same as those for 200 hours of operation, but ground crew costs drop from $3.50 hourly to $3.00, liability costs from $.46 to $.29.

Costs per hour can be translated into costs per acre, but allowance must be made for such variables as ferry time between airfields, lost time from airfield to job, and differences in rates of application of the material being released, which may be seed, fertilizer or pesticides.

One example, provided by an operator who dusted and sprayed 26,000 acres in Texas and had 380 hours of plane time, broke down as follows:

Total per acre cost for 26,000 acres was 36.3¢, of which variable costs per acre totaled 24.1¢, and fixed costs were 12.2¢. If this operator had covered only 13,000 acres, Dr. Janssen estimates his fixed costs would have been 18.5¢, and total costs 42.6¢, an acre.

Dr. Janssen, a USDA economist, is assigned to the Indiana Agricultural Experiment Station at Lafayette, Ind.

4-H Entomology Awards Announced

CHICAGO — Winners of six $400 college scholarships in the National 4-H entomology awards program were announced here recently.

Nearly 40,000 boys and girls from across the nation competed for the awards, sponsored for the past seven years by Hercules Powder Co. Forty six states competed in the program this year.

Scholarship winners are Meredith Herron of Attalla, Ala.; Herman Orcutt of Phoenix, Ariz.; William J. Platt III of Gainesville, Fla.; Paul Hayes of Waldron, Ind.; William Davis of Newton Junction, N.H.; and Anthony Nitko of Jamesburg, N.J.

A dinner honoring the national and state winners was given by Hercules. Paul Mayfield, vice president of Hercules, attended the dinner.

Special Merchandising Section

Better Selling

Marketing News and Features

On-the-Farm Selling Aids Dealer's Business

The day of the small business and low overhead seems to be passing, but a few enterprising dealers are making a nice profit with a small, closely managed store. In Sioux Falls, S.D., Roy Anderson stays busy selling feed and farm chemicals from a storage room in his brother's large oil and gasoline station.

Mr. Anderson manages the Roy Anderson Feed & Seed Store and often does business in his car, in nearby Sioux Falls or out on a farm. He is a jobber of farm products. His overhead is very low; his employee load is often just one man other than himself, and during the dull seasons he handles the business alone.

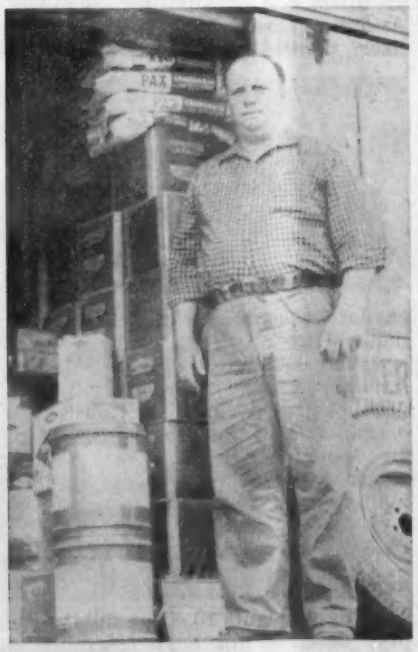
He has built a nice sideline of fertilizers, insecticides and herbicides. Mr. Anderson starts out ahead of the season, contracts fertilizer to farmers, then helps them apply it. He owns two pull-type applicators of his own and leases two others.

"The season is short here," he said, "so I must keep the equipment running as many hours every day as possible."

His main fertilizers are 15-15-0 and a 41% liquid nitrogen. After lining up his customers, he routes the equipment from one to the other. Since farmers just won't return the applicators to the store on time, he goes to the next farmer and tells him where to pick up the applicator and the exact date. This keeps the equipment in constant use.

"I don't charge a rental fee," he said, "because it is understood that the customers buys all materials from me."

Usually during the busy seasons, he spends much time in his car visiting customers and lining up future business. Mr. Anderson knows the soils of the area and is acquainted with most of the farmers. He has seen corn yields increase 15 to 20 bu. per acre when fertilized, so he can make a persuasive talk in favor of fertilizer.



ROY ANDERSON, above, is owner and manager of the Roy Anderson Feed & Seed Store, Sioux Falls, S.D. By using rental equipment and doing on-the-farm selling, Mr. Anderson has built a profitable trade in fertilizers and insecticides.

He keeps up with the very latest developments in the field and often gets some farmer to make a field test with a new product. He has recently been getting farmers to apply potash to gardens, potatoes and corn.

In addition to fertilizers, he pushes insecticide sales. This, too, is very seasonal, so no time is lost when insects are beginning to increase.

Another good seller is weed killers, which farmers are buying in larger quantities every year. Occasionally Mr. Anderson will contract farm chemicals to some land owner, pick up the materials from a wholesaler, and then deliver them to the farm.

"This saves unloading and loading up again," he said, "and also a lot of time. But to operate this way, I must know all my customers and exactly how they are operating. In other words, I must anticipate their needs and make a sale before the customers start shopping around."

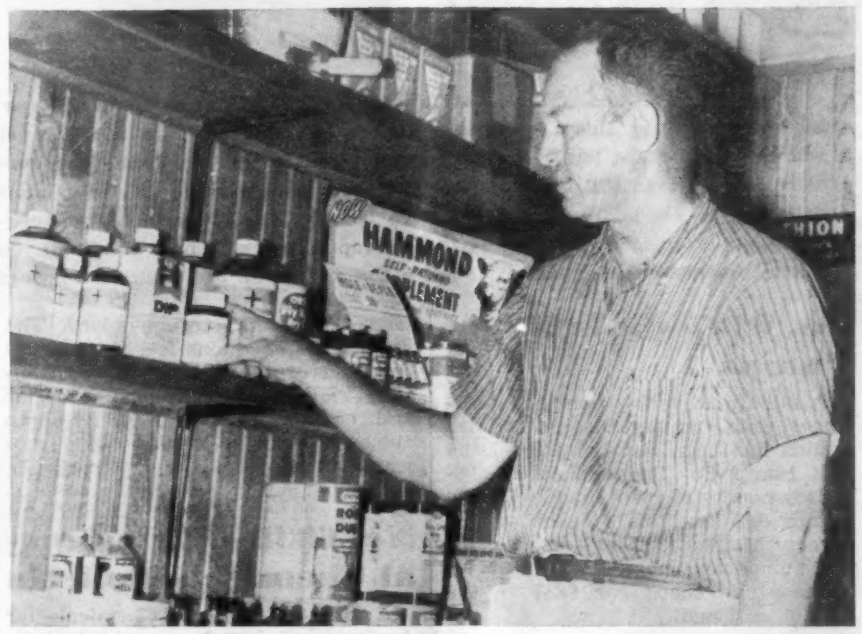
Mr. Anderson finds that farm chemicals work in smoothly with his feed and seed business. They take a lot of slack out of the year's business. When seed corn sales start dwindling, the fertilizer sales begin. He gets two chances at sales here, because farmers put fertilizer down at planting time, then come back for a sidedressing later on.

His experience fitted him admirably for such a business. He had spent five years as a salesman for a large milling company before going into business for himself. Many of these former customers stayed with him when he put in a store of his own.

"My volume is small compared to some of the big mills," he said. "But I don't have any costly equipment or high rent. I am out some for advertising, but I have no field men, no regular secretary, no payroll. When I sell $1,000 worth of feed or fertilizer, the profit margin is much higher than if a large mill sold it."

To make such a business successful, the owner must know the area. He much have a wide acquaintance with farmers, wholesalers and the agricultural experts. He must be able to make friends with his customers and manage things closely.

"Perhaps the most important thing is hard work," he said in conclusion. "A fellow's got to put on his hat and go out after business. That's the mark of a successful salesman, whether he works on a commission or is in business for himself."



JOHN FRIEDLAN, above, is manager of agricultural chemicals at Chickasha Milling Co., Chickasha, Okla. Mr. Friedlan has increased sales steadily by learning all he can about the products, working closely with county agents and experts from the manufacturing companies, visiting with farmers, and keeping a neat, well-planned store where products are placed in attractive displays.

Chemical Line Brings Extra Profits to Oklahoma Store

A profitable sideline to the Chickasha Milling Co., Chickasha, Okla., is a small farm store and fertilizer department managed by John Friedlan. It's Mr. Friedlan's job to make this part of the business pay off, and for several years he's been doing just that.

His motto is to sell farmers what they need instead of what might make the store a big profit. It is based on customer service, though he has no applicators or spreaders to rent, and there are no give-away programs.

"We try to help the farmers make higher yields," he said. "This means fertilizer, then, later in the season, the proper type of insect control."

He works closely with the county agricultural agent and company entomologists and experts. In one area near Lindley, a neighboring village, he found that broom corn was not responding well to fertilizer. Farm-

(Turn to CHEMICAL LINE, page 20)

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Farm supply retailers who are doing business in a store laid out 10 years ago are 10 years behind the pace of modern merchandising methods.

And those dealers who have never given any thought to store arrangement because they feel that customers like an old-fashioned store are fooling themselves. Actually, those dealers themselves like the old-fashioned store, not the customers.

Farm stores today are compared with other retail stores that are well arranged, well lighted, neat, clean, attractively painted, have displays and shelving conveniently arranged. Stores in many fields are air conditioned. Customers nowadays don't prefer these improvements—they expect them.

A well-planned floor layout will increase sales and earnings by speeding up customer traffic. Sales jumps of up to 25% have been reported by farm supply dealers who remodeled or rearranged their stores. By properly spacing fixtures, more usable display is provided and shopping convenience enhanced. Maintenance is simplified. An out-dated store with jumbled merchandise is not only difficult to shop, it's difficult to clean.

Most farm supply stores are not in the position—and won't find it necessary—to m o d e r n i z e on a grand scale by building a new store. There is another way to modernize and rearrange a store and that is by staying in the same location, same building and making improvements by e a s y stages. Whichever method is chosen, the

(Turn to SHOP TALK, page 12)

What's New...

In Products, Services, Literature

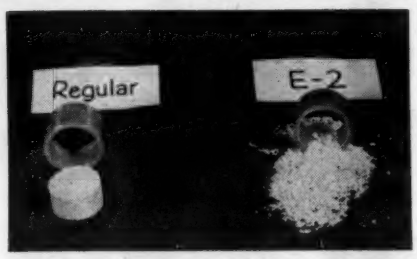
You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6837—Bulletin on Pumps

A bulletin covering pumps for fertilizer and temperature controlled liquids has been issued by the Dean Hill Pump Co. The publication discusses results of tests made with the pumps and contains data on performance. Illustrations and diagrams of the pumps are included. For further information, check No. 6837 on the coupon and mail.

No. 6839—Ammonium Nitrate Fertilizer

An ammonium nitrate fertilizer, which the Monsanto Chemical Co. says will not cake during storage and is dust free, has been announced by the firm's inorganic chemicals division. Called "Lion E-2," the product can be stored indefinitely, the company says, and its higher density takes 20% less storage space. The product also remains free-flowing under unfavorable conditions, the company claims, which makes it easier and cleaner to handle. The photo above shows the product being subjected to a pressure test. Check No. 6839 and mail for details.

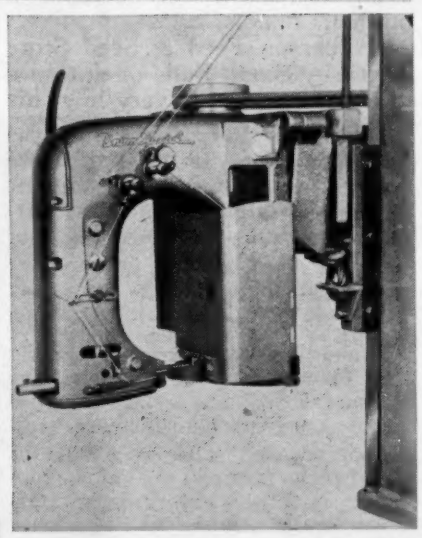


No. 6838—Agricultural Chemicals Bulletin

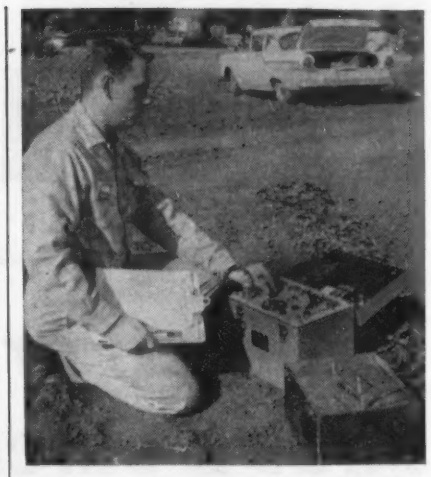
A bulletin entitled "Chemicals for Agriculture" has been published by Roberts Chemicals, Inc. The bulletin describes eight products currently offered by the company for the agricultural trade. Included in the list of products are fungicides, herbicides and insecticides. For copies of the bulletin, check No. 6838 on the coupon and drop in the mail box.

No. 7239—High-Speed Sewing Head

Union Special Machine Co. announces a new high-speed sewing head, Style 53600 H, for closing medium and heavy weight bags made of burlap and single ply or multiwall paper. The machine incorporates a 25% speed increase over the previous machine used in that range, the company says. The unit has automatic lubrication and is adaptable for



mounting on existing bag machine frames and columns. The machine can handle up to five-ply multiwall gusset type paper, the company says. Check No. 7239 on the coupon and mail for details.



density on the surface level, the company says. The models P21 and P22 Surface Moisture and Surface Density Probes are the latest additions to the company's "d/M Gauge" system. The probes provide moisture and density measurements directly on the surface of the material eliminating the necessity of removing, weighing or destroying a sample of the material for testing, the company says. Complete details can be obtained by checking No. 6828 on the coupon and mailing to this publication.

No. 6833—Fly Repellent

Union Carbide Chemicals Co., Division of Union Carbide Corp., announces that Crag fly repellent has been cleared by the U.S. Department of Agriculture as an ingredient for livestock spray formulations on a "no residue" basis. According to the company, the product is effective against horse flies, stable flies, horn flies, mosquitoes, house flies and gnats. For information, check No. 6833 and mail.

No. 6824—New Products Catalog

Publication of the latest edition of its products catalog describing properties and uses of 375 industrial, pharmaceutical and agricultural chemicals, is announced by the Dow Chemical Co. The 1958-59 issue is the fourth annual booklet issued by Dow. Containing a new cover and new features, the catalog is a ready reference for Dow's broad range of chemicals. This catalog may be obtained without cost by checking No. 6824 on the coupon and mailing it.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6831—Silica Insecticide

Davison Dri-Die Insecticide 67 is a new silica aerogel powder which is now on the market under an experimental label. Developed through research at University of California at Los Angeles, Dri-Die acts on insects in two ways: By dehydration and by a secondary chemical action. Insects need not eat the insecticide to be killed; simply crawling over the dust is sufficient. The Davison Chemical Division indicates there is no need for mixing, since the product is produced ready for treatment. Data on Dri-Die may be obtained by checking No. 6831 on the coupon and mailing.

No. 6827—Available Reprints

Reprints of a large number of publications on all phases of fertilizer, soils and crops are available from the American Potash Institute, Inc. The Institute says the reprints can be obtained in moderate quantities as long as its supply lasts. For a list of available reprints, check No. 6827 on the coupon and mail it to this publication.

No. 6828—Soil Gauges

Two probes developed by Nuclear-Chicago Corp. permit rapid determination of moisture content and

No. 6830—Trailer Spreader

Simonsen Manufacturing Co. has added a tractor-drawn trailer spreader to its line of fertilizer spreaders. According to the company, the fertilizer dealer can start operations

earlier because he can get into the fields with a tractor where a truck spreader couldn't operate. The trailer spreader has an all-weather wheel-drive assembly and the unit's fan operates from the power take-off of any standard tractor. For details, check No. 6830 on the coupon and mail to this publication.

No. 7210—Exhibit Display

A lightweight 10 ft. exhibit display designed for easy assembly is now available from Federal Displays, Inc. The exhibit is packed in a shipping case 4 ft. by 8 ft. by 3 in. and weighs 110 lb. The unit can be assembled in 15 min. without tools, officials say. Check No. 7210 on the coupon and mail to this publication for more details.

Send me information on the items marked:

- ☐ No. 6824—New Products Catalog
- ☐ No. 6827—Available Reprints
- ☐ No. 6828—Soil Gauges
- ☐ No. 6830—Trailer Spreader
- ☐ No. 6831—Silica Insecticide
- ☐ No. 6832—Drum Phosphating Process
- ☐ No. 6833—Fly Repellent
- ☐ No. 6834—Gibberellin Publications
- ☐ No. 6835—Instrument Data Sheet
- ☐ No. 6836—Anionic Surfactant Booklet
- ☐ No. 6837—Bulletin on Pumps
- ☐ No. 6838—Agricultural Chemicals Bulletin
- ☐ No. 6839—Ammonium Nitrate Fertilizer
- ☐ No. 7118—Bagging Scale
- ☐ No. 7210—Exhibit Display
- ☐ No. 7213—Mobile Floor Crane
- ☐ No. 7236—Bag Handle
- ☐ No. 7239—High Speed Sewing Head

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COMPANY .....

ADDRESS .....

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Reader Service Dept. Minneapolis 40, Minn.

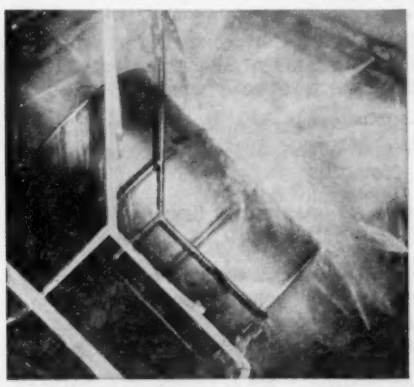
No. 7236—Bag Handle

The Multiwall department of Hudson Pulp & Paper Corp. announces a double side handle has been added to Multiwall bags. The handles support weights of 50 lb. and more, the

company says. With the new handles the bag can be carried like a suitcase. It also makes for easy pouring, the company added. For more information, check No. 7236 and mail to this publication.

No. 6832—Drum Phosphating Process

Bennett Industries, Inc., announces a steel drum phosphating process in which 30 and 55-gal. drums pass through an eight-step procedure. In the washer, hundreds of high pres-



sure nozzles spray drums inside and out in each of six stages. In the final two steps, the drums are dried and the cooling is controlled so that they reach the paint spray equipment at the best temperature for paint application, the company says. According to the company, the film of phosphate coating received in the process provides a good surface and inhibits rust and corrosion. For details, check No. 6832 on the coupon and mail.

No. 7213—Mobile Floor Crane

The Vanguard Engineering Co. announces the Aero-Crane, a counterbalanced mobile floor crane having an adjustable boom with the hook reaching 48 in. beyond the front

edge of the truck. The crane has a 10 ft. high reach and goes down to 1½ ft. from the floor. The running gear is of 10 in. diameter Timken bearing wheels for easy rolling, the company says. The unit is available in several models from 1,000 lb. to 3,000 lb. capacity. For more details check No. 7213 on the coupon and mail to this publication.

No. 6836—Anionic Surfactant Booklet

Antara Chemicals Sales Division of General Aniline & Film Corp. has published a 16-page booklet on the properties and uses of its Igepon series of anionic surfactants. The brochure describes the chemical derivation of Igepon and gives the chemical formula, functional properties and uses of each of the brands. For copies, check No. 6836 on the coupon and mail to this publication.

No. 6834—Gibberellin Publications

Two publications on gibberellin have been published by Merck & Co., Inc. One is a reprint of an article, "The Effects of Gibberellin on Economic Crops," by S. H. Wittwer and M. J. Bukovac of Michigan State University. The other is a booklet entitled "What You Can Tell Farmers About 'Bibrel.'" It contains information on the commercial use of gibberellin. For details, check No. 6834 on the coupon and mail to this publication.

No. 6835—Instrument Data Sheet

Techniques for making pH measurements in soils, emulsions, suspensions and oils are covered in a data sheet issued by the applications laboratories of Beckman/Scientific and Process Instruments Division. Proper care of pH electrodes is discussed and step-by-step procedures are detailed for pH measurements in dry, porous samples, oils and other water insoluable liquids. For details, check No. 6835 on the coupon and mail to this publication.

No. 7118—Bagging Scale

Burrows Equipment Co. has announced a new bagging scale. Known as Model No. 700, the scale occupies

an area 18 in. square. It can be attached quickly to a feed mixer, bin or hopper, and it will bag at the rate of six to eight bags a minute and the bag clamp is designed to hold paper, burlap or cotton bags of 50 to 100 lb. capacity. The weigh beam is built into the back of the scale. For details, check No. 7118 on the coupon and mail it to Croplife.

Make SMIROW TANKAGE the sales builder in your fertilizer

SMIROW is the quality, natural organic supplement to chemical plant foods.

* **Valuable to your customers**
  because it provides for *controlled release* of plant nutrients for health, steady growth and good color. SMIROW Tankage is 100% natural organic.
* **Valuable to your dealers**
  because it is plainly visible in fertilizer — they can point to it in selling *your* brand.
* **Valuable to your employees**
  because it's less dusty. No hazard in handling.
* **Valuable to you**
  for all these reasons. SMIROW Tankage provides a built-in sales stimulant in a time of keen competition.

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A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED

Let us figure the cost of SMIROW tankage delivered to your plant.

SHOP TALK

(Continued from page 9)

owner must do some sound thinking and planning.

Store rearrangement or remodeling can be accomplished over a period of several months or even over a period of several years. Often slack time can be devoted to making in-store improvements. The dealer's financial situation will also dictate how far a project should go. Often a dealer can accomplish wonders with a few hundred dollars by pushing out a wall, giving the store a complete and tasteful paint job and rearranging fixtures in an orderly and logical manner.

Principles which should be remembered when rearranging the store are:

- The less expensive, fast-moving items should be placed near the front, the "demand" items to the rear.
- Aisles should run without interruption from front to rear and from wall to wall. The path to the cash register should be a smooth one.
- Talking signs should clearly indicate various departments.
- Mass displays and fixtures amply stocked make the store look full of merchandise.
- Customers on entering the store should always be exposed to the narrow dimension, or end of the islands and not their width.
- The cash register and order counter should be at the rear of the store, requiring the customer to be exposed to the full length of the store's merchandise displays.
- Plan the "hot spot" display near the order counter for store sales activity gravitates toward this unit.
- Make all displays attractive, price-mark all items and keep all merchandise within the customer's reach.

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*Trade Mark

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What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

The problems involved in introducing new agricultural chemical products on the market received the attention of 350 chemical marketing and production specialists at a joint meeting of the Commercial Chemical Development Assn. and the National Agricultural Chemicals Assn. in Baltimore, Nov. 20-21.

Pesticide dealers and salesmen had some earnest advice from a Food and Drug Administration official at the annual Rutgers University Pesticide Dealers' Conference in New Brunswick, N.J., on Nov. 20. The official admonished the "few pesticide salesmen or distributors more interested in peddling merchandise than in rendering a customer an honest service."

The announcement of the immediate construction of a 60-ton-per-day anhydrous ammonia plant in Arizona was made by C. P. Gould, president of Southwestern Agrochemical Corp., and Owen Cooper, chairman of the board of First Mississippi Corp.

Vertical integration in agriculture will continue to expand in the years ahead, Dr. Tyrus R. Timm, head of the department of agricultural economics and sociology at Texas A&M college, declared in Omaha recently. He spoke at the American Bankers Assn.'s seventh agricultural credit conference.

A presentation on how farmers accept new ideas, a panel discussion of equipment, inventory control and standardization as pathways to profits and a look at the changing economic society as a challenge to today's business leadership were the program highlights at a lively annual meeting of the National Fertilizer Solutions Assn. held in Cincinnati.

A full three-day convention featuring representatives of the fertilizer industry, the universities and the entertainment industries comprised the 35th annual convention of the California Fertilizer Assn. in Los Angeles. Some 500 attended, with many coming from distant portions of the country.

Ray Hubble, Medford, Ore., was elected president at the seventh annual Oregon State Weed Conference in La Grande, Ore. More than 250 Oregon farmers, ranchers, weed control specialists and chemical company representatives from all over the U.S. discussed weed control problems and latest scientific developments.

The U.S. Department of Agriculture has announced changes in the barter program through which surplus Commodity Credit Corp.-owned farm products are exchanged for strategic and other materials produced abroad. The changes will be effective immediately with respect to new barter offers.

The city of Baltimore will allow fertilizer grade ammonium nitrate to move freely through its port. That's the gist of an ordinance compromise brought about at a special hearing there, Nov. 10.

United Heckathorn Co. of Richmond, Cal., is opening its first agricultural chemical manufacturing plant at Magna, near Salt Lake City, Utah.

The Tennessee Valley Authority said Nov. 12 that it has discontinued the manufacture of concentrated superphosphate containing 48% plant nutrient, and is engaged in perfecting a process for the manufacture of superphosphate of a higher concentration.

Although the U.S. Department of Agriculture says in its November Demand and Price Report that "some reduction in realized net income appears to be in prospect" for farmers in 1959, this report must be diagnosed by crops and areas, said John Cipperly, Croplife Washington correspondent.

A new method of incorporating calcium cyanamid into soil shows great promise of increasing the chemical's effectiveness in controlling annual weeds, according to two University of California scientists.

More than 300 representatives of the fertilizer manufacturing industry heard thorough-going discussions on production techniques, equipment and the economics of preventive maintenance during the three-day fertilizer industry round table at the Mayflower Hotel in Washington, D.C.

Arizona Fertilizers, Inc., Phoenix, completed construction of a $50,000 emulsifier plant for the blending of liquid insecticides at its Yuma, Ariz., branch. Machinery in the 5,000 sq. ft. plant has a production capacity of about 1,000 gal. per hour and storage facilities for about 10,000 gal.

A description of the program conducted by the National Plant Food Institute in the Southeast, a talk on the merits of soil testing and a panel discussion on a soil fertility program carried on with farmers in two North Carolina counties comprised a large portion of the Southeastern Fertilizer Conference held at the Biltmore Hotel in Atlanta, Ga.

"There are no short-cuts, push-buttons or ready-to-wear solutions" to the problems of the agricultural chemical industry, Frank S. Washburn, general manager of the Agricultural Division, American Cyanamid Co., declared at the closing session of the 25th anniversary meeting of the National Agricultural Chemicals Assn. in Savannah, Ga.

An attempt by the Minnesota Farm Bureau Service Co., St. Paul, to express fertilizer ingredients in elemental terms rather than on an oxide basis is meeting with little reaction on the part of the firm's customers.

North Dakota Nitrogen, Inc., of Bismarck, N.D., announced it had awarded a contract to the Chemical & Industrial Corp., Cincinnati, as consulting and construction engineer for a fertilizer plant in the Bismarck area.

Members of the National Agricultural Chemicals Assn. took a long look at 25 years of growth and progress in the pesticide field during the group's silver anniversary convention here Oct. 29-31—then more than matched the story of the past 25 years with some searching looks into the next 25 years. About 600 attended.

The Association of American Fertilizer Control Officials, at its annual meeting, recommended that the taking of fertilizer samples be done at the individual fertilizer plants.

Arcadian® News

Volume 3 | For Manufacturers of Mixed Fertilizers | Number 11

MAKING SEMI-GRANULAR FERTILIZERS WITH STANDARD ROTARY EQUIPMENT

The growing demand for higher analysis fertilizer grades has stimulated interest in the use of sulfuric acid to make these higher grades. Although sulfuric acid is not essential for such formulations, it has been found that its use often increases agglomeration of finer particles to yield a fertilizer of superior appearance and condition. To take full advantage of this, experience has shown that a special type of ammoniating solution—such as Nitrogen Division's NITRANA® 3MC—is required.

Special Technique Required

Probably the most important factor in producing semi-granular fertilizers is the uniform distribution of sulfuric acid and ammoniating solution into the dry ingredients. The higher the analysis, the less latitude is permissible to get good results—just as in ammoniation alone. And, since sulfuric acid is introduced *before* the ammoniating solution in the semi-granulation process, any error in handling this liquid makes proper introduction of the other liquid far more difficult! In simple ammoniation, the careless operator gets no more than a powerful whiff of free ammonia. But in semi-granulation, the careless operator can cause a variety of additional hazards, such as dense white fumes, dense brown fumes, and flashes of fire which usually appear as sudden violent puffs!

Oxides of nitrogen produced in flash fires and contained in brownish fumes present a serious safety problem, in addition to causing analysis difficulty in the final product. Accordingly, the breakdown of ammonium nitrate by sulfuric acid *must* be minimized. Therefore, good spray pipes must be used, and these usually require considerable custom fitting right on the job because of differences and limitations of the equipment available. The orifices in the pipes must be kept as small as possible to control the speed of introduction of liquids by these orifices instead of relying on line valves. Throttling of a line valve often causes poor distribution due to lack of pressure at the spray pipe orifices.

Technical Tips for Better Ammoniation

Points to Remember

For the best possible results in semi-granulation, the producer would do well to check his equipment and procedure against these eight important points:

1. Spray pipes should be as simple as possible and easily removable to minimize maintenance costs. Stainless steel is preferable for solutions, while extra heavy black iron is suitable for acid.

2. Dry superphosphate and a low water, high ammonia and ammonium nitrate content solution, such as NITRANA 3MC, are necessary.

3. All dry materials should be screened to remove large lumps, as in good pulverized fertilizer practice.

4. 66°Be′ sulfuric acid (93.19%) seems to be best in most cases. With very dry superphosphate, 60°Be′ (77.67%) may be used. 98% sulfuric acid is probably a little more difficult to distribute safely in the mixer without causing fumes; and it also has a freezing point that is a bit too high for use in cold locations.

5. Use of uniform coarse filler or granulated potash will help reduce fines in the finished product. Obviously, the less very fine material, the less agglomeration necessary.

6. Cooling of the semi-granulated material is always necessary, whether by rehandling or by rotary cooling.

7. The usual starting practice is to charge all dry materials, introduce all sulfuric acid, and then introduce solution. Time of rotation before discharge may vary. Most grades may be discharged immediately after ammoniation.

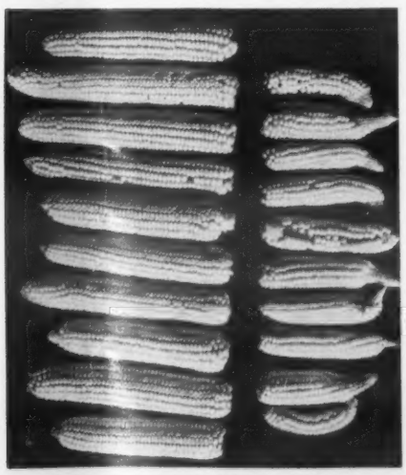
8. Reversion of P_2O_5 has not been a problem even at fairly high manufacturing temperatures—250°F.—because material is of low moisture content and is cooled within 24 hours.

For more specific information on any of these factors or any problem related to making semi-granular fertilizer, write to Technical Service, Nitrogen Division, Allied Chemical, 40 Rector Street, New York 6, N.Y. Phone: HAnover 2-7300.

The Bridge to a Successful Fertilizer Demonstration

One of the best ways to sell fertilizer is to develop a carefully-planned field demonstration to show the big profit that can be made from fertilizer—and get thousands of farmers to come and see it.

Such a demonstration was sponsored by Nitrogen Division, Allied Chemical, at The Prairie Farmer Farm Progress Show, September 24 and 25, which was attended by more than 215,000 farm people.



WITH and WITHOUT fertilizer.

The aim of the demonstration was to show a striking comparison between well-fertilized corn and corn with no fertilizer. Three one-acre plots received a well-balanced, high-nitrogen, complete fertilizer program. Two one-acre check plots received no fertilizer, and these were real "starvation alleys."

An important feature of the demonstration was an observation bridge constructed so that farmers could get a good view of the corn plots at pre-harvest stage. Thousands of farmers and their families crossed the bridge, studied the plots, and visited the Nitrogen Division tent to get more facts about proper fertilization.

Careful Planning and Preparation

Work on the demonstration started nine months before the Show. The field was typical farm land, not too fertile. It had been in unfertilized pasture for two years. Soil tests showed that the soil needed lime and that it contained about 75 pounds of nitrogen, 65 pounds of phosphorus and 100 pounds of potash per acre.

The soil was limed and a complete fertilizer program was prepared and followed. This included plow down of the equivalent of 1,500 pounds of 10-10-10 fertilizer per acre, followed by 130 pounds of 12-12-12 starter fertilizer and a top-dressing of 50 pounds of nitrogen.

Corn was planted on May 4, using 20,000 kernels per acre. Starter fertilizer was applied to one side and below the seed. An insecticide was applied to control soil insects. The corn was cultivated only once—enough to control weeds.

Difference was Easy to See

The season was wet and cold with little sunshine. But the fertilized plots came through in fine shape. The "starvation alleys" without fertilizer lived up to their poor prospects. The contrast was wonderful! You could see the difference a quarter mile away. All plots were big and wide so that the check plots got little help from the fertilized plots.

Each plot was marked with an easy-to-read sign, placed low along the ground or high above the tassels so that it would not interfere with the view, and be easy to photograph with the crop. The observation bridge was really a

30-foot platform with 25-foot approaches at each end. Going up the steps and across the bridge, the crowd had time and opportunity to get an excellent view of the entire area of all the plots. Before their eyes was a striking picture of the difference fertilizer makes in the growth and yield of a corn crop.

Along the railings of the stairs leading to the platform were lists of 30 factors affecting the yield of corn, starting with nitrogen, phosphorus and potash and continuing through other factors all the way to harvesting.

Big Profit from Fertilizer

Yields from 1/100 acre had been harvested from each plot and placed in a basket in front of the plot. Visitors were invited to guess the yield of each plot and turn in their estimates to compete for prizes. This helped to stimulate more interest and make the viewers examine the plots carefully.

There was a big difference in yields and profits between the fertilized and the unfertilized plots. Fertilizer produced 151 bushels per acre, as compared to 44 bushels with no fertilizer—an increase of 107 bushels for fertilizer.

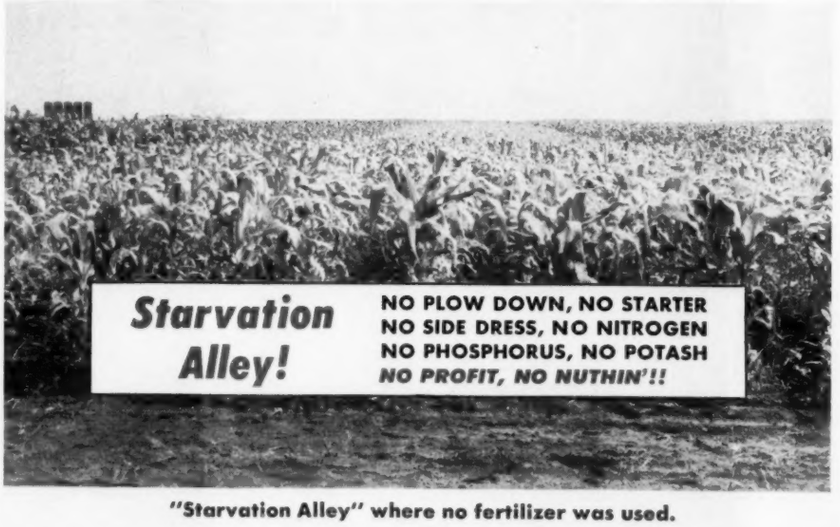
Moisture was 10% lower in the fertilized corn and protein content was 2½ to 3½% higher. Assuming that 60% of the fertilizer was used by this year's crop, and figuring corn at $1 per bushel, the fertilizer paid a big profit.

Farmers Were Convinced

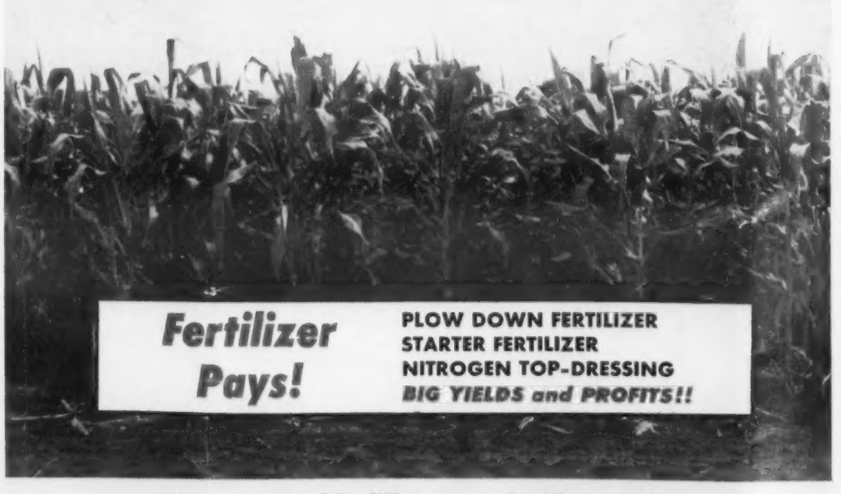
There was every indication that the demonstration was a huge success. Many favorable comments were heard—"If this demonstration doesn't convince farmers to use fertilizer, nothing else can". . ."You have told the story with the corn plots, the signs, the approaches and the bridge better than if a book had been written on the subject". . ."This is the best fertilizer demonstration I have ever seen anywhere!"

Lessons learned from this demonstration: allow yourself plenty of time . . . make all your plans and preparations well in advance . . . make sure you get a striking difference in growth and yield . . . test the soil and give it what it needs . . . use big plots . . . use plenty of the right fertilizer and plenty of good seed for thick spacing . . . put up easy-to-see, easy-to-read signs . . . arrange a field day just before the crop matures when corn is at its best . . . attract thousands of farmers and provide them with a good vantage point from which to view the whole field so they can see the profits from fertilizer.

Nitrogen Division exhibit tent at demonstration.



"Starvation Alley" where no fertilizer was used.



Farmers saw a big difference on fertilized plots.

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When you purchase your nitrogen requirements from Nitrogen Division, Allied Chemical, you have many different nitrogen solutions from which to select those best suited to your ammoniation methods and equipment. You are served by America's leading producer of the most complete line of nitrogen products on the market. You get formulation assistance and technical help on manufacturing problems from the Nitrogen Division technical service staff. You benefit from millions of tons of nitrogen experience and the enterprising research that originated and developed nitrogen solutions.

	CHEMICAL COMPOSITION %						PHYSICAL PROPERTIES		
	Total Nitrogen	Anhydrous Ammonia	Ammonium Nitrate	Urea	Water	Neutralizing Ammonia Per Unit of Total N (lbs.)	Approx. Sp. Grav. at 60°F	Approx. Vap. Press. at 104°F per Sq. In. Gauge	Approx. Temp. at Which Salt Begins to Crystallize °F
NITRANA®									
2	41.0	22.2	65.0	—	12.8	10.8	1.137	10	21
2M	44.0	23.8	69.8	—	6.4	10.8	1.147	18	15
3	41.0	26.3	55.5	—	18.2	12.8	1.079	17	-25
3M	44.0	28.0	60.0	—	12.0	12.7	1.083	25	-36
3MC	47.0	29.7	64.5	—	5.8	12.6	1.089	34	-30
4	37.0	16.6	66.8	—	16.6	8.9	1.184	1	56
4M	41.0	19.0	72.5	—	8.5	9.2	1.194	7	61
6	49.0	34.0	60.0	—	6.0	13.9	1.050	48	-52
7	45.0	25.3	69.2	—	5.5	11.2	1.134	22	1
URANA®									
6	42.0	19.5	66.3	6.0	8.2	9.3	1.178	10	34
10	44.4	24.5	56.0	10.0	9.5	11.0	1.114	22	-15
11	41.0	19.0	58.0	11.0	12.0	9.2	1.162	10	7
12	44.4	26.0	50.0	12.0	12.0	11.7	1.087	25	- 7
13	49.0	33.0	45.1	13.0	8.9	13.5	1.033	51	-17
15	44.0	28.0	40.0	15.0	17.0	12.7	1.052	29	1
U-A-S®									
A	45.4	36.8	—	32.5	30.7	16.2	0.932	57	16
B	45.3	30.6	—	43.1	26.3	13.5	0.978	48	46
Anhydrous Ammonia	82.2	99.9	—	—	—	24.3	0.618	211	—

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Memphis 9, Tenn., 1929-B South 3rd St. Whitehall 8-2692
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Doing Business With

Oscar & Pat

It was mid-morning and Pat McGillicuddy had not yet come to work, which made his partner—rotund, balding, pot-bellied Oscar Schoenfeld—quite angry. Now and then he looked at the clock on the wall, and his lips got tighter and his head would shake.

However, he kept working furiously at something on his desk where he had a sheaf of papers. He wrote quickly with pencil on some of these papers.

After a half hour he got up, took the papers and went to Tillie's desk.

"Ach, I haf a little notice here I want you to type," he announced sharply. "One for effery employee. That means eight copies. Und you better make an extra one for me and one for the Irisher."

He handed Tillie a couple of sheets and then gave her some additional paper. "Type the notices on the other side of these," he said.

"B—but these are agricultural experiment release sheets," Tillie protested. "Can't I use fresh, clean papers?"

Oscar's lips tightened. "No. It is time we start to safe aroundt here. This paper is plenty goot enough."

Tillie shrugged. "Oh, all right," she said, "but I know Pat won't like it. He's a stickler for using fresh stationery and envelopes."

"I don't care what he likes," Oscar said sharply. "This is my own idea. I own half the company. Let him shtick to his department and I'll shtick to mine—cutting costs."

Tillie studied the copy which Oscar had given her and blinked her eyes.

The headline read "DON'T WASTE MONEY," and then followed 10 rules.

As Tillie read the copy she used her pencil now and then to correct Oscar's writing, for he used as many phonic spellings in his writing as he used in his speech.

Tillie sighed. What a place to work! Why did she stick it out here, after quitting once because Oscar and Pat quarreled so much? Life was hard here, but certainly never dull, not with these two partners at each other's throats all the time.

"If I ever went into business for myself," Tillie once told a friend, "I think I would make a big success, because of my experience with Oscar and Pat."

"Why is that?" asked the friend.

"Because," Tillie replied, "I certainly wouldn't be as tight as Oscar, and I wouldn't be such a spendthrift promoter like Pat. I'd be somewhere in between, and believe me, I'd be all right financially."

"But you don't want to get into business for yourself," said the knowing friend. "All you want to do is talk Dave Schuster into asking you to marry him—after eight years' courtship."

"Isn't it the truth?" Tillie replied disgustedly. "Why do I let him make such a sucker out of me? But I love him, that's why, darn it."

Now Tillie slipped carbons between the agricultural press release sheets and began to type Oscar's copy:

1. Turn out all lights when not using them—even in the u-know-what. Electricity costs money.

2. Keep all doors closed when the weather is cold. Heat costs money. If you're cold in the warehouse in winter, wear heavier underwear.

3. Oil trucks carefully. Don't let oil drip on floor. It's gone up terribly in price.

4. Make customer notes on old envelopes. There are plenty in our wastebaskets. Don't waste new paper foolishly.

5. Save all string and tie loose ends together. New string is sky high, and our money is limited.

5. Save all paper clips, rubber bands, sacks and anything that can be used again. That's good business.

7. Report all torn fertilizer sacks immediately. Don't throw away any spilled fertilizer. We can sell it at our Bargain Table.

8. Don't gun our delivery trucks or drive over big bumps too fast. Gunning uses too much gas, and bumping might break something. Those trucks cost a lot of money. You should have to buy one once.

9. The dollar you save may be just the one we need to pay your salary.

10. Remember, money is always in style, especially so when you ain't got any.

"Oscar, do you think the men will like this?" asked Tillie after she had finished.

"I don't think if they like it or not," Oscar snapped. "Are you finished? I will go out in the warehouse and gif each of them a copy now—those that are in."

So Oscar took the typed sheets and carbons and proud and strutting like a peacock went into the warehouse. When he got back he was still glowing in his own way about his deed. He glanced at the clock. It was 11:30—his lunch time, and Pat was not even in yet. It always burned Oscar up when Pat did not phone in to say where he was, even if he was out in the country calling on customers before getting to the office. Or sleeping late, as was sometimes the case.

After Oscar had gone, Red Peterson, a tall lanky employee came into the office holding the sheet Oscar had given him. "I'm writin' a letter to Jack Benny," he said seriously. "I'm tellin' him I found his cousin here in this town. A guy named Oscar. May-

(Turn to OSCAR & PAT, page 19)

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FARM SERVICE DATA

Extension Station Reports

Benefits from chemical spray applications were summarized in a recent report by Dr. Robert G. Hill, Jr., of the Ohio Agricultural Experiment Station, Wooster, on his three-year weed control studies with strawberries.

Dr. Hill stated that the chemical weed preventer, Sesone, used at the rate of three pounds per acre of sprayed area, on medium-type soil, is a satisfactory herbicide for use in strawberry plantings during the growing season.

After plants are established, as many as four Sesone herbicide applications may be made if four weeks elapse between treatments. This will not reduce plant stand or yield, he said.

Dr. Hill reported that the amine salt formulation of 2,4-D is more likely than Sesone to cause serious injury to strawberries. More than one application of 2,4-D at the rate of one pound of the acid equivalent per acre is apt to cause severe reduction in stand and yield of berries.

However, he said, proper application of 2,4-D at the rates indicated can be expected to result in a marked reduction in the amount of labor required to keep a commercial strawberry planting weed-free.

Carefully-followed chemical weed control procedures may be used to advantage by large strawberry growers, Dr. Hill emphasized. He recommends mechanical and manual weeding until plants become well established. Then herbicides may be applied, according to the manufacturers' instructions, he said.

★

A Wisconsin extension soils specialist reports that corn yields were boosted as much as 24.6 bu. acre, when the crop was sidedressed early with nitrogen after an application of complete fertilizer in the row.

Prof. C. J. Chapman, of the University of Wisconsin's soils department, says the sidedressed corn withstood drouth better than corn that was not sidedressed.

The increased corn yields were obtained in a demonstration on the Reilly-Schuester farm at Deansville, Wis. Here three plots received different amounts of fertilizer and had a varying stalk population.

Prof. Chapman reports yields averaged 101.6 bu. acre on a plot that received 125 lb. of a 6-24-24 fertilizer, plus a sidedressing of 150 lb. per acre of a nitrogen fertilizer. Yields averaged 97.6 bu. on a plot with starter fertilizer, plus 61.5 lb. of nitrogen; and 77 bu. acre on a check plot that had the starter fertilizer alone.

The nitrogen sidedressing plus the use of the starter fertilizer helped the corn establish a deep root system, Prof. Chapman says. This enabled the roots to penetrate deeper into the soil for needed moisture, so the plants were better able to withstand drouth.

★

Stored grain insects have apparently increased greatly in numbers this fall, due to moisture conditions and temperatures in grain.

This warning comes from Robert E. Roselle, extension entomologist at the University of Nebraska. The mild fall has resulted in a longer reproductive period for most grain insects, he pointed out.

After infestations have become established, the only practical control measure is fumigation.

Fumigants work best if grain temperature is above 70°, and grain moisture is 12% or lower. When grain temperature is below 70°, fumigation may not be completely effective, Mr. Roselle stated. When grain moisture is above 12%, additional fumigant is usually needed.

Grain stored on farms can be fumigated with several commercial fumigants. The common ones are 80-20, 75-25, and EB 5. Many other combinations are available. They should be used according to recommendations on the container or on advice of county agents.

"It is time to fumigate when one granary weevil, rice weevil, or lesser grain borer is found per quart sample of grain, or 5 other kinds of grain insects are found per quart," the University specialist said. Samples can be screened over 10-14 mesh screen wire to find the insects.

Grain in storage this winter should be checked every three or four weeks for insects, rodent contamination, hot spots and moisture, he concluded.

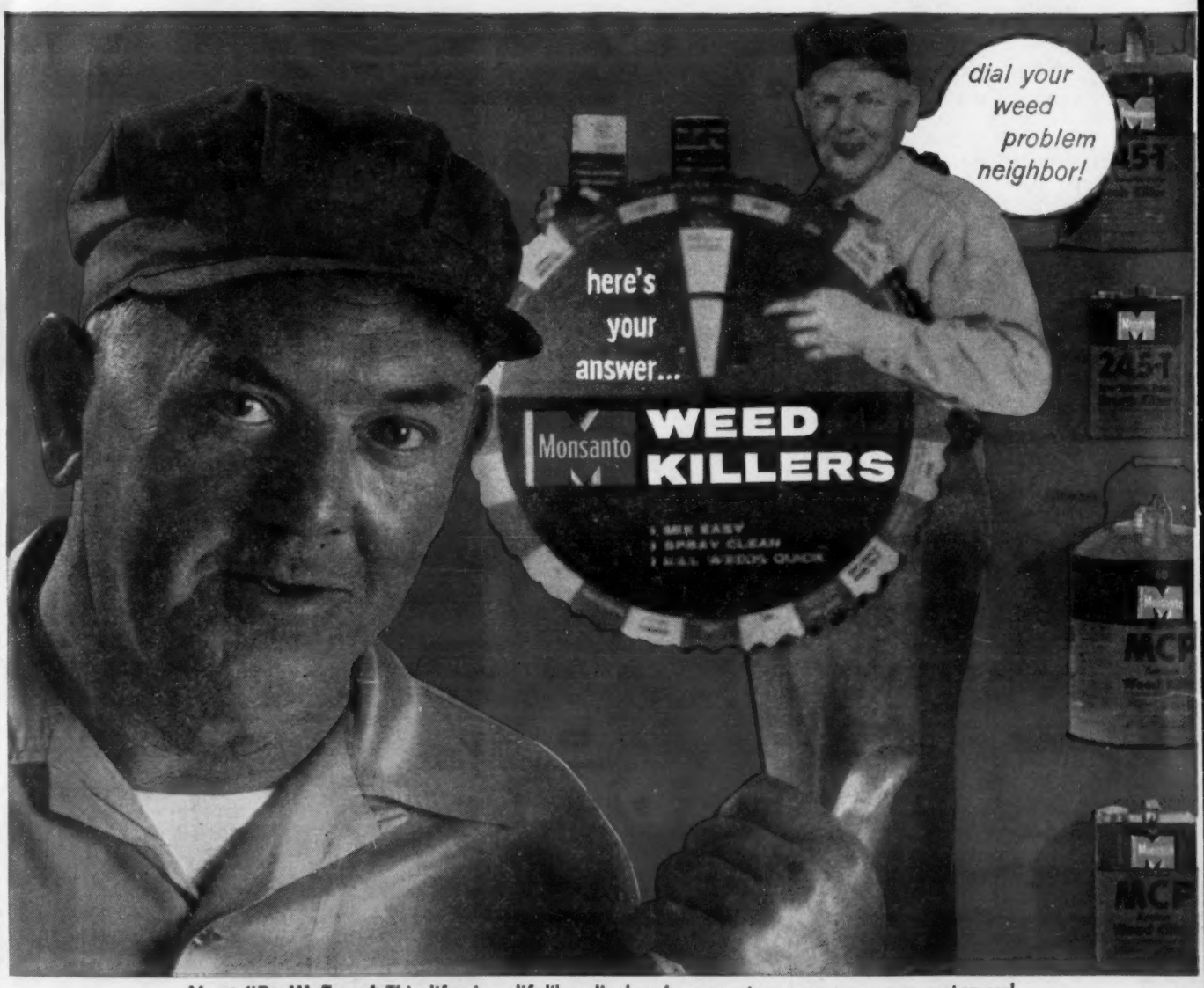
★

Corn yields went as high as 141 bu. per acre when the stalk population averaged 19,000 plants on high fertility soil, reports Dr. Gordon J. Ryder, Ohio State University extension agronomist, in citing tests at the Ohio agricultural experiment farm.

Dr. Ryder points out that corn profits and yields per acre could be considerably increased on many farms by boosting the number of stalks per acre and supplying sufficient fertilizer to feed the corn plants. His statement was summarized by the Midwest division of the National Plant Food Institute.

"You can't get a good stand of corn if you don't plant the seed," he says. "Inadequate corn stands are often due to a failure to drop enough kernels per acre."

In further citing the need for larger stalk populations to make use of the plant food nutrients in the soil, Dr. Garth Volk, head of Ohio State University's agronomy department, reports that about 50% of the corn fields on Ohio farms have fewer than 10,000 stalks per acre.



Meet "Red" Emm! This life-size, lifelike display in your store answers your customers' weed-control questions with a big "dial-the-crop" selector that tells what to use, what to buy.

FOR YOU, FOR '59: THE WEED-KILLER

HERE'S WHAT YOU GET:

MONSANTO'S "RED" EMM ADVERTISING support in Farm Quarterly, Farm Journal, Successful Farming, American Vegetable Grower, County Agent and Vo-Ag Teacher reaches virtually every farmer, ag. school, and county agent in your local sales territory.

NEW TAGGED CONTAINERS "TELL" AND "SELL." Your customer gets complete how-to-use instructions right on the can. Every Monsanto container carries a special tag packet that tells your customer how to apply the weed killer, with easy-to-read, step-by-step directions.

NEW SPOUT-TOP 5-GALLON CAN sells your customer on the Monsanto Brand. Here's a premium package with a handy pour-spout that won't leak, splatter or splash. And when it is empty, your customer will find dozens of uses for this handy container . . . it means *extra* business for you.

Dr. H. J. Mederski, of the University's agronomy staff, reports that tests indicate it is profitable for farmers to use row fertilization in addition to plow-down applications of plant food for corn. Corn responded well to row fertilizer on silt loam soils that had previously received heavy bulk applications of fertilizer.

★

University of Minnesota soils men and farm management specialists list these benefits from pasture fertilization, based on the results of fertilizer demonstrations in 11 counties this year:

1. More milk and meat can be produced from fewer acres when farmers add sufficient plant food to their permanent grass pastures.

2. Dairy production costs are reduced, because less grain is needed to support the flow of milk from cows, with pasture fertilization and good grazing management.

3. Fertilized pastures produced about four times as much grazing and weight gains for sheep as did unfertilized plots.

4. Pasture improvement on sloping fields releases good tillable land for corn and other high-income crops.

5. As the fertility level is raised on many soils, brome grass and other high producing species will come in and take over the greater percentage of the grass growth.

Farmers cooperating in the pasture demonstrations kept records of the effects of plant food on the number of grazing days and the milk production per cow and per acre. In the tests, the farmers cooperated with University of Minnesota extension specialists and county agents.

The over-all program was directed by Dr. Lowell Hanson, extension soils specialist, Dr. Ermond Hartmans, farm management specialist, and William Hueg, extension agronomist —all of the University of Minnesota.

A financial grant from the National Plant Food Institute helped support the program.

OSCAR & PAT

(Continued from page 17)

be Benny'll give me a commission for finding a guy tightern' he is."

Tillie burst into laughter and so did Red. "Did you ever see anything like it?" she asked.

"Nope," said Red. "Boy, I'm gonna show this down at the tavern tonight at the fish fry. I don't care if I get fired for it. I wonder if I could write this as a letter to the local newspaper, anonymous, you know. A Letter from the People. Bet he'd publish it."

"You wouldn't dare!" gasped Tillie.

"I wouldn't?" grinned Red. "You just wait and see. And I'll head it 'IS THIS 1858 or 1958?'"

Look at this packaging! Every Monsanto product is the best of its kind on the market. Here's *quality* that assures you repeat business.

LINE THAT SELLS ITSELF 4 WAYS!

Only Monsanto brand gives a weed-killer line that sells itself in 4 ways:

Quality products . . . that really work!
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Powerful advertising . . . to attract customers!
An "educated" display . . . an extra salesman to answer questions . . . right in your store!

HERE'S ALL YOU DO TO CASH IN:

1. Stock the Monsanto 2,4-D Weed Killer formulations best for the crops and weed problems in your area. Monsanto gives you a choice of seven.
2. Stock the Monsanto 2,4,5-T Brush Killers right for your area. Monsanto offers six formulations, including the safest types for use near sensitive crops.
3. Put in a "trial" stock of Monsanto Randox® and Vegadex®—two new spray-as-you-plant weed killers that control grassy weeds in corn, soybeans, and vegetables.

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Learn how THIS BRAND can help you sell more in '59 with less time and effort. Mail the coupon today!

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Gloomicides

A Texas story now going the rounds concerns a man who struck oil, and, with his new riches, built a mansion and three swimming pools. One pool he kept filled with cool water and another with warm water; the third he kept empty. He explained: "A lot of my friends can't swim."

★

Just heard of a busy exec who went to a psychiatrist and complained he found little men running around under his bed every night. The doctor shook his head ominously. "This is a very serious problem," he said. "It may take years of analysis. Let me know when you are ready to start."

Some weeks later the analyst ran into the exec and asked why he'd never returned. "Well I just couldn't afford the time, doc," said the exec, "so I got rid of those little men by myself. I cut the legs off my bed."

★

A man came in the other day to borrow a globe for his son. The boy was studying the United States, so that's what daddy asked for—a globe of the United States.

★

A New York psychiatrist met his old friend, Sam, and asked him how things were going.

"Not so good," Sam replied. "My brother is very sick."

"Your brother isn't sick," contradicted the psychiatrist. "He only thinks he's sick. Remember that, he only thinks he's sick."

Two months later they met again and the doctor asked:

"How's your brother now?"

"Worse," Sam groaned. "He thinks he's dead."

★

A couple celebrating their 20th anniversary were seated at the movies, watching one of those torrid-foreign films. When they got home that night the wife turned to her husband coyly.

"Why is it you never make love to me like all those men in the movies?" she murmured.

"Are you crazy?" he replied. "Do you know how much they pay those fellows for doing that?"

★

On his way to the city, commuter Jim Smith found himself seated next to a very nosy neighbor. During the course of their conversation the curious one asked Smith what he had paid for his house, his car, and what dues he paid at the country club. The exasperated Smith replied as shortly as possible, but the interrogator was undismayed as he continued: "I hear you sold that pedigreed retriever dog of yours."

"Yes," said Smith.

"Do you mind telling me what you sold him for?" pursued the questioner.

"Not at all," retorted Smith. "I sold him for chewing the table leg."

★

The locker-room flunky had been laboring at his jobs for 20 years. He swept the floors, mopped the shower rooms, washed the dirty socks, disinfected the pool, cleaned the lockers, picked up the scraps in the trainer's room and put out the garbage. All without complaint—until he came home one evening and bitterly cried to his wife:

"Imagine, the school is starting freshman football this year plus track. That means 120 more pairs of dirty socks to wash every night and all that extra sweeping, mopping and disinfecting. It isn't fair!"

"Why don't you quit?" his wife asked.

"I'd like to," he sobbed, "but how can I give up sports?"

CHEMICAL LINE

(Continued from page 9)

ers had been using a 13-13-13 mixture. Mr. Friedlan, working with others, found that potash was causing the stalks and head to grow unevenly. He substituted a 15-30-0 ratio on the following crop and found the stalks were growing round and even.

His two main problems in selling fertilizer are to induce farmers to use it, then he must collect for it. In the local area, many older farmers are retiring and their sons taking over the farms. Mr. Friedlan finds these younger farmers much easier to work with. They will also keep records on fertilizer tests, which can be of great help to the dealer.

Collecting is more difficult than before World War II, mainly because people are buying so many things. Mr. Friedlan extends credit, but usually knows with whom he is dealing. As a result of this watchfulness he has had few losses and only one bad check.

Of equal importance on the profit side is the sale of insecticides and weed killers. This last year army and cut worms were threatening alfalfa crops before farmers started poisoning. Mr. Friedlan was in the thick of the fight and sold a large quantity of insect killers, mainly because he had anticipated the infestation.

"This area has had the same thing," Mr. Friedlan said, "and one way to beat the low margin of profit on fertilizer is to order in large quantity and try to sell the same way. We order by the carload lots, and sometimes take it from the railroad right out to the farm."

Small packaged goods are also increasingly profitable in the farm store, he says. Town trade in this city of about 15,000 is getting more important every year. Residents are buying a lot of organic and chemical fertilizers, grass and flower seed, garden supplies and insecticides.

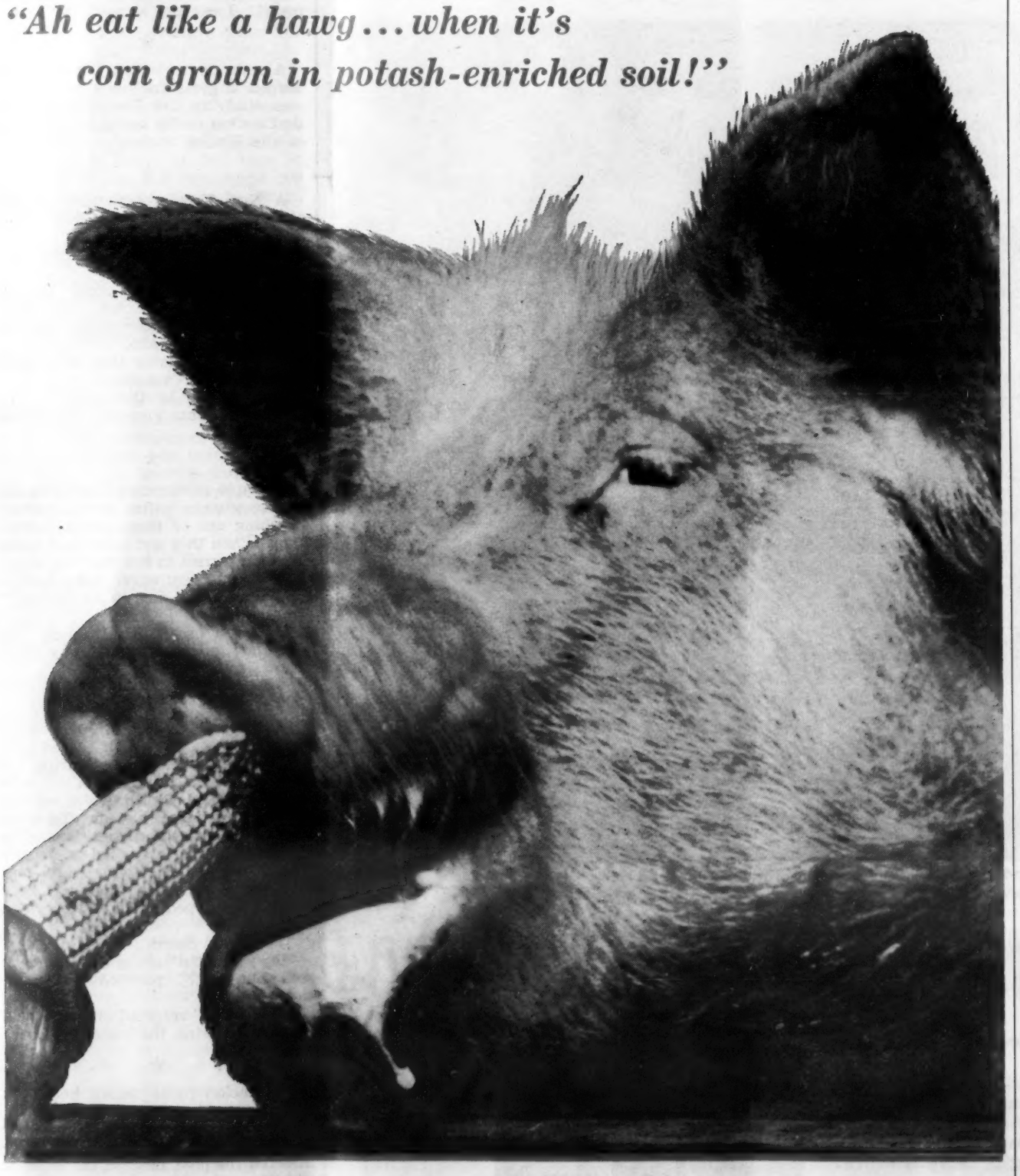
"We don't compete too much with stores selling a lot of garden supply equipment," he said. "Ours is more in the chemical and seed lines. Many of our sales go to those farmers who have been buying and selling feed. You might say the farm chemical sales are extras or tie-in sales."

He believes in keeping a store neat, attractive and arranged so that customers can see almost all the merchandise at a glance. He also uses the manufacturer's cooperative advertising, uses posters and pictures on the walls and displays, and places seasonal goods at the front of the store and just outside.

There is no high-pressure selling methods, but each customer is greeted courteously and served in a friendly but non-insistent manner.

"It's getting to be a buyer's world instead of a seller's," he said, "so selling is more important than ever before. By learning his products and their use and by knowing and being interested in the farmer's problems, nearly any dealer can bring his store an increase of sales. And he can do it without twisting the customer's arm and selling him something he doesn't want or need."

"Ah eat like a hawg... when it's corn grown in potash-enriched soil!"



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Co-ops Divide Feed, Fertilizer Businesses

ST. PAUL, MINN.—The feed and fertilizer businesses of the two biggest cooperatives of the Farmers Union group have been divided between themselves, it was announced this week.

Farmers Union Grain Terminal Assn. (GTA) and the Farmers Union Central Exchange (FUCE), both of St. Paul, announced the division Nov. 25.

The division follows GTA's recent purchase of the feed and elevator business of the McCabe Co., Minneapolis. GTA takes over distribution of all feed including that formerly handled by FUCE, and, at the same time, FUCE takes over the entire cooperative fertilizer distribution in the northwest area served by the two cooperatives.

The announcement was made at the Minnesota Farmers Union convention by Thomas H. Steichen, general manager of FUCE. It is reported to have cleared up speculation that the two would be competing against each other in the feed and fertilizer business.

Mr. Steichen cited FUCE as a "perfect example of farmers handling their own integration of farming operations through a cooperative."

Two Sales Changes Announced by Bemis

ST. LOUIS — John R. Cullinane, resident manager of the paper specialty plant of the Bemis Bro. Bag Co. in Crossett, Ark., has been appointed sales manager for all paper specialty plants, with headquarters in St. Louis. He is being succeeded in Crossett by J. S. Heard, former resident manager of the Albion, N.Y., paper specialty plant.

Mr. Cullinane is a graduate of the University of Illinois, where he received a bachelor of science degree in economics and business administration. He joined Bemis in 1947 and was assigned to the Albion plant, later being transferred to St. Louis. In 1956 he was appointed to the position he held until his new assignment.

Mr. Heard attended New York schools and joined Bemis in 1949 as a salesman out of Albion. He was made Albion sales manager in 1956.

Construction of Mixing Plant In Washington Is Planned

PASCO, WASH.—The newly organized Graham-Wilhelm Chemical Co. will build a $150,000 fertilizer mixing plant here, according to Hugh S. Graham, Pasco, president. John W. Wilhelm, Yachats, Ore., is executive vice president and treasurer.

No date has been listed for construction of the plant.

Building Fertilizer Plant

HALSEY, ORE.—A bulk fertilizer plant is being built here for the Oregon-Washington Fertilizer Co. of Seattle. Plans call for completion by spring. The plant is adjacent to Cross Bros. elevator and will be operated by them. Bulk fertilizer will be shipped from Portland and Seattle.

ST. LOUIS, DECEMBER 1, 1958 —

Monsanto introduces the first truly non-caking ammonium nitrate fertilizer

LION E-2

Now, for the first time since the development of solid prilled ammonium nitrate fertilizer, you and dealers everywhere may offer customers an ammonium nitrate that ends complaints and costly returns due to caking. It's Monsanto's new LION E-2 ammonium nitrate.

Developed and tested under all extremes of storage conditions by Monsanto farm researchers, amazing LION E-2 surpassed all expectations for non-caking, non-powdering performance. There is nothing like it on the market for dependable, trouble-free storage. It means much greater ease in handling for both the dealer and the farmer.

New LION E-2 ammonium nitrate is available this month. It is an exclusive, premium quality ammonium nitrate fertilizer, yet LION E-2 will cost no more than ordinary ammonium nitrate fertilizers.

This combination of premium product performance at ordinary ammonium nitrate prices will make LION E-2 the most wanted ammonium nitrate in America. LION E-2 provides the same sales advantage as offering a high octane, additive-packed gasoline for the price of "regular."

For more information contact Monsanto at once. Write, wire or call:

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North Dakota Soils Tests Show Lack of Phosphorus

FARGO—North Dakota soils tend to run very low in phosphorus, reports the soils department of the North Dakota Agricultural Experiment Station after classifying the 16,434 soil samples from all parts of the state sent for analysis by farmers between September, 1953, and July, 1958.

The farmers are much interested and concerned about the condition of their soil, too, as well over 2,000 samples have been received since July 1 of this year, and have been tested or are in process of being tested now, the experimenters report.

Since the experiment station began testing soils for farmers, the number taking advantage of the service has grown steadily. In 1953-54 about 2,100 soil samples were tested and in 1954-55 about 1,900. In 1955-56 the number grew to about 3,300; to about 4 300 in 1956-57; and to 5,400 in 1957-58.

Of the total number of samples classified so far, only 1,751 have been high in phosphorus; 2,612 have been medium; 3,228 have been low, and 8,843 samples, well over half of the total, have tested "very low."

James F. Orr Succeeds Arthur T. Newell as Stauffer Manager

NEW YORK — Arthur T. Newell, manager of the Henderson Works of Stauffer Chemical Co., Henderson, Nev., is retiring Jan. 1, 1959. However, Mr. Newell will continue to serve the company in a consulting capacity, acting as advisor to the Henderson works manager.

James F. Orr has been appointed to succeed Mr. Newell as works manager and Leonard J. Edwards has been appointed assistant works manager.

As an engineer for Basic Magnesium, Inc., Mr. Newell helped build and operate the wartime project, the company said. He was also the first president of Basic Management, Inc., which owns and operates the power and water supply, railroad spurs, and other common facilities for the entire group of chemical-metallurgical plants at Henderson. In 1945 he joined Australian Cream Tartar Co., an affiliate of Stauffer Chemical Co. Mr. Newell has been associated with Stauffer Chemical Co. since 1946.

Mr. Orr joined Stauffer Chemical Co. in 1956 after having had extensive experience in mining and smelting. He is a graduate of the University of Pittsburgh. Mr. Edwards became assistant to the works manager in 1952. In his new assignment as assistant works manager he will assume broader responsibilities, the company said.

Pied Piper Absent: Mice Damage Trees

URBANA, ILL.—An orchard near Moline, Ill., suffered mouse damage to more than 80% of its trees last winter.

"The really significant fact is that it probably wouldn't have happened if this orchard owner had used mouse-prevention measures," said Frank Owen, University of Illinois extension fruit crops specialist.

The orchard is spread out over 67 acres in Rock Island County, and contains some 2,200 12-year-old apple trees. Mr. Owen explains the damage in this way:

The farmer was extremely busy harvesting crops last fall and winter. And because mouse-sign was light, he did not "bait" the orchard at that time. On January 20, 1958, inspection still didn't reveal signs of mouse activity. However, on that same day, snow began falling and for nearly seven weeks the orchard floor was covered.

When the snow melted, the farmer found runways and other mouse-signs in nearly every part of the orchard. The exact number of mice that were present was impossible to determine, but they were numerous enough to have damaged about 1,800 trees.

Upon inspecting the orchard, the farmer found that much of the damage was below ground level and that 60 to 75% of the damaged trees were completely girdled.

He immediately baited the orchard with 275 lb. of strychnine-treated oats. He placed this bait directly in the mouse runways, and within a few days most of the mice had been killed.

The damaged trees were grafted, but only a few of the grafts were successful, and many trees will have to be regrafted. At best the trees will take several years to recover. Meanwhile they are weak and will produce only small crops. Thus the farmer's profit from the orchard will be far below average.

Joins Advertising Staff

NEW YORK — G. Thomas Catherines has joined the advertising department of Witco Chemical Co., Inc., New York, as assistant to the advertising manager. This is a new position with Witco, created to promote more effective liaison between technical and non-technical members of the industry, the company said. Mr. Catherines was formerly with the development department of Evans Research.

Miller Move

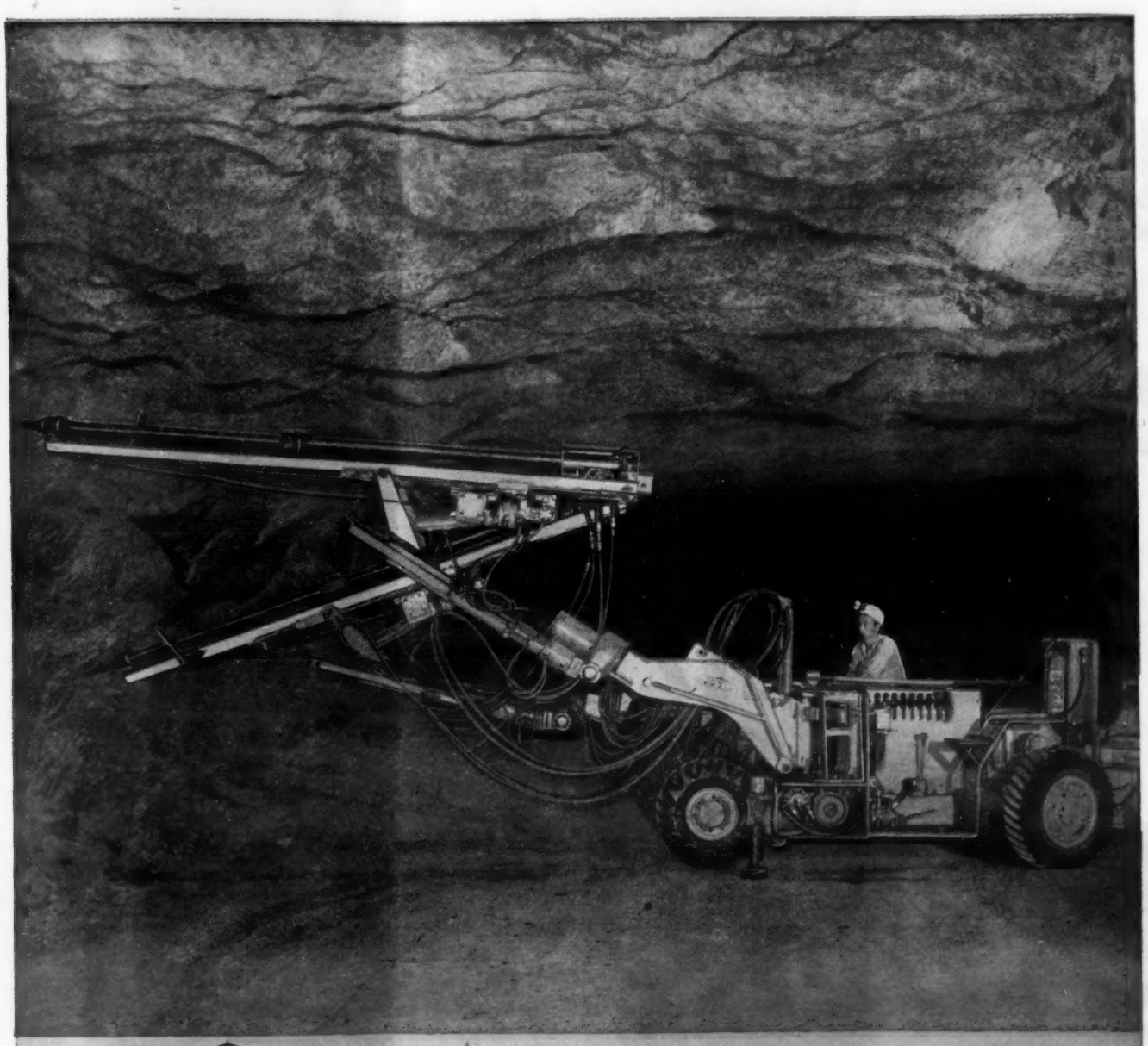
BALTIMORE—Miller Chemical & Fertilizer Corp. has announced the removal of its general sales office to the new Miller Chemical Bldg., 3006 W. Cold Spring Lane, Baltimore 15, Md. The telephone number is Mohawk 4-2350.

FERTILIZER FIRM

OILDALE, CAL.—The J. V. B. Spreader Service is the name of a new company formed in Oildale to sell and distribute gypsum and crop fertilizer materials. Owners of the company are Cecil J. Bailey and Malcolm C. Book of Bakersfield, and Grace Jenkins of Oildale.

FARM STORE BURNS

SALEM, ORE.—A $200,000 fire recently gutted the G and B Farm Equipment Co. here. A. L. Girod and Clifton H. Boehmer, owners, said loss to farm equipment was about $170,000 plus $30,000 or more invested in the block square building.



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Panogen Starts Canada Distribution; Announces Two New Appointments

RINGWOOD, ILL.—Following the announcement that Panogen Co., a division of Morton Chemical Co., has started distribution of its products in Canada by Panogen of Canada, Ltd., William J. Crist was appointed manager of Canadian sales. Petrus Hellman, president and general manager of Panogen, made the announcement.

William J. Crist

Mr. Crist will be concerned with the distribution of Panogen products in Canada and assisting him as field representatives will be Lionel Hart of Winnipeg and James Taylor of Lethbridge, Alberta.

Mr. Crist graduated from the University of Minnesota in 1949 and joined Panogen Co. in 1953. Since then he has served in various sales capacities.

In another appointment, Dr. Raymond P. Seven, former director of agricultural research at Morton Chemical research laboratory, Woodstock, Ill., was named technical director of Panogen Co. In his new position, Dr. Seven will devote all his time to supervision of product development and field use, Mr. Hellman said. Dr. Seven is a graduate of Calvin College, Grand Rapids, Mich., and received his Ph.D. in organic chemistry and biochemistry at the University of Illinois.

Raymond P. Seven

Off Year for Filberts

PORTLAND, ORE.—This has been an off year for filberts. Latest report from Ray Hile, in charge of the Oregon USDA crop reporting service office here, shows that the 1958 filbert harvest yielded only 7,150 tons, one half of last year's bumper crop and a little below the state's 10 year average output for this nut. Tonnage was pulled down partly because blanks were somewhat more common than last year and the fact that a higher percentage of the nuts graded large, leaving fewer jumbo and medium sized ones.

RESEARCH GRANT AWARDED

ORONO, MAINE—The University of Maine here has been awarded a $3,000 grant by the International Minerals & Chemical Corp. for research in plant nutrition and soil fertility during this fiscal year, it has been announced. Dr. R. A. Struchtemeyer, head of the university's agronomy department, will direct the study.

CALIFORNIA SALES UP

SAN FRANCISCO—Sales made by farm and garden supply stores in California rose to $33,018,000 during the second quarter of 1958, representing a rise of about 6.7% over sales for the same three months of 1957, reported the division of research and statistics of the California State Board of Equalization. Most of these stores also handle fertilizers and insecticides, which sales figures are represented in the increase.

AGRICULTURE FORUM

URBANA, ILL.—The University of Illinois department of agricultural economics revealed plans for the first Agricultural Industries Forum, a new type of conference for all businesses and industries serving agriculture. Harold G. Halcrow, head of the department, announced the dates as Jan. 27-28, 1959, on the University campus at Urbana.

Black Frost Damage Runs High in California

SACRAMENTO—Losses are estimated in the millions from a black frost which visited many parts of California sending temperatures skidding into the 20's.

The heavy frost killed the squash and cucumber harvest in the Imperial Valley, sometimes called the nation's winter salad bowl, and cantaloupes, sweet corn, beans, potatoes and peas suffered in other parts of southern California.

Growers fired up orchard heaters and switched on wind machines to protect lemons and oranges in many parts of the state. Citrus crops were damaged in the north and west sections of the San Fernando Valley.

In northern California, the ripe olive crop was severely damaged by the freeze. The California Olive Advisory Board reported that damage was so extensive that there appeared to be more than 40,000 tons of olives left on the trees. Such olives usually have to be processed for oil and have no use for canning.

Edward Doran Joins Davidson-Kennedy

ATLANTA — Davidson - Kennedy Associates Co., designer and constructor of chemical and food plants, has announced the appointment of Edward Doran as project engineer.

Mr. Doran graduated from Illinois Institute of Technology in mechanical engineering and after leaving the Navy worked in mechanical equipment design and sales. He joined the Chemical Plants Division of the Blaw-Knox Co. in 1955, where he served as a mechanical equipment selection engineer and then as a project engineer.

PROCESSING PLANT

CLEARLAKE OAKS, CAL. — The Cinder Products Co. is the name of a new processing plant manufacturing fertilizer.

Californians Want Old Orchards Burned

SACRAMENTO — Supervisors of Placer County are considering an ordinance which would force owners of abandoned orchards to destroy their trees as a measure for control of pear psylla.

The proposal has the support of the Placer County Fruit Growers Conference. Placer County is one of California's largest pear producing areas. It is forecast that heavy losses will occur from pear psylla next year unless control measures are adopted.

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SF farms are big, averaged more than 300 acres in 1957, up from 218 acres in 1945. And farm subscribers' incomes are big—estimated annual average cash farm income around $10,000 for the past decade, reached a record $10,870 in 1957, will be higher this year!

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AAI

(Continued from page 1)

high as 68% of the customers lost to a firm went elsewhere because of this factor.

What are the qualifications for success as a salesman? Mr. Burger named five such ingredients as follows: Character, hard work, ability, courage and personality.

Character, he said, is manifested through absolute sincerity and loyalty on the part of the salesman. Next to this quality, hard work and industrious effort to "see the people," is necessary. Ability to plan a day's work and then to work the plan separates the men from the boys in the field of selling, he went on.

"The successful salesman has the same number of hours in the day as does the mediocre or failing salesman," he said. "The difference is in the use of those hours—the ability to plan his work and then to follow through on his plan. In addition, of course, he must have the ability to learn his proposition, to know his stuff and to make it clear."

The star salesman, Mr. Burger observed, guards his health, is always friendly, keeps his temper, radiates enthusiasm, is a good loser and never gives up. He loves his work, puts forth just 10% more effort, does things the average salesman doesn't like to do and constantly cultivates new prospects.

There must also be the courage to call back again and again, because only a small percentage of new customers are sold on the first attempt. He must have the courage to start to really working on the prospect when he tells the salesman that the price is too high. "A real salesman is a guy who can sell without cutting the price," the speaker told his audience.

Combined in all of the qualities mentioned earlier is personality. This involves the salesman's ability to smile, his desire and willingness to be a good listener and self-control over talking too much.

The most outstanding personality trait of the successful salesman is his enthusiasm, the speaker concluded. "If you have it, you show it, your prospect gets it, your company loves it and you cash in on it."

Ed Lipscomb, director of sales promotion and advertising, National Cotton Council of America, Memphis, gave the convention assembly food for thought in a lunchtime discourse on how to gain personal individual security which he described as being the principal obsession of the twentieth century.

"Most of us look on security these days as the ultimate achievement in a world that has grown too complicated for us; a world where we are conscious of being pushed around by forces beyond our control," he observed.

The speaker outlined three areas where most people seek personal security: In money, public programs and job benefits such as pensions and seniority. Each of these avenues winds up in a blind alley, he declared. Money, often regarded as a good buffer, loses its value and can no longer, of itself, be an assurance of security. The same is largely true of public plans and programs, social security, public housing and other such efforts to bring on unfailing security for all.

The average citizen thinks he can vote himself into security, Mr. Lipscomb said, and this is one of the "great and tragic delusions of our time."

"With the highest wages in the world, more than half of our 60-odd million workers say they are dissatisfied with their jobs, and with more money and machines than ever before, we have more mental cases. With more buildings going up, we have more nervous systems breaking down."

Where then can security be found?, he asked. The speaker then answered his own question by saying that seeking security as such is self-defeating. The only power to gaining real security lies within ourselves, and it is built on ideals, not dollars; principles rather than pension; and character rather than convenience or expediency.

Officials of the institute made reports on the activities of the group during the past year. Jack F. Criswell, executive vice president, presented a financial report and told institute members of progress made along a number of fronts in the anhydrous ammonia industry.

Paul J. Duesterhaus, NH, distributor from Quincy, Ill., president of the AAI, outlined a number of achievements of the past year and pointed up some objectives for the future in his address during the opening program.

He told of the progress he has seen personally during the eight years of his association with the ammonia industry, and said that use of this material for fertilizer is no longer a novelty, but a tried and proved method of introducing plant food into the soil.

Safety steps have been taken, he reported, and the committee has made great strides in lessening both the number and severity of accidents with ammonia. He said that numerous benefits have been derived through the AAI, and that the new safety manual will reduce much of the fear of handling ammonia.

Instructions for operation are being made into decals, he said, and these may be put on the tanks for ready reference in the field.

One of the problems faced by the industry is to organize and distribute research material from the colleges. The agronomy committee is working on this matter at present and progress is being made, he said.

Experience shows that use begets use in the case of ammonia, the speaker said. In areas where NH_3 has been used for a number of years, consumption is on the increase. However, there are still too many growers who have never been sold on the process and they remain a challenge to the industry, Mr. Duesterhaus said.

The program Dec. 4 and 5 was to include talks by agronomists from colleges and the industry, representatives of basic suppliers, and a round table discussion covering topics such as agronomy, safety, insurance, method and rates of placement, high level production factors and the part played by pesticides.

AAI DIRECTORS

CHICAGO—The Agricultural Ammonia Institute at its annual meeting here named eight new directors to serve three-year terms. The members comprise five distributors, one supplier of equipment, a manufacturer and a basic producer. They are R. E. Bobaum, Great Plains Service Corp., Ashland, Neb.; Harold Boettcher, Boettcher Supply, Beloit, Kansas; S. C. Smith, the Smith Co., Uvalde, Texas; Louis Windham, Louisiana Agricultural Cooperative, Baton Rouge, La.; Philip Wood, Philip Wood, Inc., Chalmers, Ind.; Walter Burkhardt, Burkhardt-Larsen, Minneapolis; K. "Doc" Eldon, Continental Anhydrous Ammonia Co., Dallas, and W. J. Haude, Grace Chemical Co., Memphis.

AAI OFFICERS

CHICAGO—The Agricultural Ammonia Institute elected officers for 1959 during its annual convention here Dec. 4 They are S. C. Smith, the Smith Co., Uvalde, Texas, president; Carl Bauserman, Southern Michigan Nitrogen Co., Richland, Mich., first vice president; C. J. Struble, Standard Oil of Indiana, Chicago, second vice president; Hampton Pugh, the Pugh Gin & Fertilizer Co., Tillar, Ark., secretary, and David H. Bradford, Jr., Mid-South Chemical Corp., Memphis, treasurer.

MEDFLY

(Continued from page 1)

had been eliminated from 21 of the 28 infested counties in southern and central Florida. Eradication operations had greatly reduced the number of flies in the remaining seven counties. From June, 1957 until the last fly was trapped in November of that year, only 13 flies were found.

Once before, in 1929, this dreaded fly invaded Florida. At that time it was eradicated by an intensive program within a year's operation. USDA-state cooperative efforts, including the destruction of many host plants and thousands of tons of infested fruit, were responsible for the quick success.

Such measures would not have been feasible in 1956-1957 because of high labor costs and the large number and variety of ornamental and native host plants growing in the Miami area which were not affected in 1929. Furthermore, development of safe-to-use bait insecticide mixtures permitted eradication without the destruction of millions of dollars worth of fruits and vegetables that accompanied the 1929 campaign.

Modern-day eradication was achieved with modern-day weapons—aerial applications of bait sprays, soil treatment under heavily infested trees, plastics traps, attractants and various fumigants—many of them developed by the Agricultural Research Service laboratories in Hawaii. By early 1958 when spray operations were discontinued, approximately 800,000 acres had been treated one or more times for a total of 7 million treated acres.

MOVES OFFICE

MORGAN HILL, CAL.—A. L. Castle Inc., seed and insecticide firm, has moved from Mountain View, Cal., to Morgan Hill, in order to have its headquarters closer to its plants and seed farms in the central part of the state, as well as to its agricultural markets.

NPFI to Support North Carolina Pasture Project

WASHINGTON—The National Plant Food Institute, through its southeastern regional office, has completed arrangements with the North Carolina Agricultural Extension Service to support a pasture demonstration program in 10 counties throughout the state.

The project is aimed at demonstrating sound pasture seeding, maintenance and management practices, and NPFI is providing a $2,500 grant to support the program for the fiscal year ending June 30, 1959. The NPFI contract with the extension service is subject to renewal on an annual basis.

Establishment, fertilization, maintenance and management of all forages including permanent and temporary pastures, hay and silage crops are planned. The demonstrations will serve (1) as a means of showing farmers the production possibilities from using all improved production practices, (2) instruments in training county agents, (3) materials for field meetings, and (4) sources of possible surveys among those attending the field meeting and viewing the demonstrations.

Certified seed of Oregon Ladino clover and Potomac orchardgrass will be applied for five acres per county for new seedings. Plots will be set out in several locations in each of the 10 counties. In the case of alfalfa, seed will be furnished for approximately eight varieties to be seeded in small plots.

The basic demonstration will be limed and fertilized according to a soil test. Small check plots of no lime, no phosphate and no potash also will be established, and in the case of pure grass, checks without nitrogen will be set out. Topdressing materials will be supplied in accordance with the soil test.

North Carolina Extension Service personnel will assist in carrying out the demonstrations.

Dealers, Farmers to Meet At North Dakota Conference

FARGO, N.D.—Fertilizer dealers and farmers will meet at North Dakota Agricultural College here Dec. 12 for a conference at which research work of the experiment station and farmer experience with commercial fertilizers will be reported.

The session for bringing dealers and farmers up-to-date on NDAC fertilizer research and recommendations has been held annually the past 10 years. E. J. Haslerud, director of the extension service, will open the conference at 9:30 a.m.

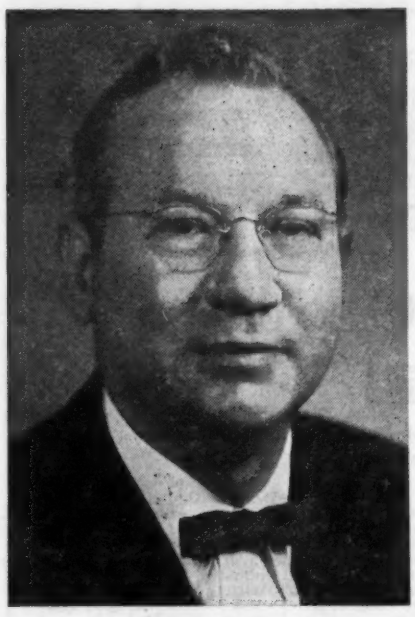
Information to be presented includes: fertilizing of corn under dryland and irrigation conditions; new information on fertilizing flax; phosphorus needs of grain crops; providing nitrogen needs of grain crops; economics of fertilizer use, and a discussion of fertilizer recommendations. Speakers include staff members of the experiment station and extension service.

Other speakers are Zenas Beers of the National Plant Food Institute and George H. May of the First National Bank, Fargo.

Iowa Short Course

AMES, IOWA—The program for the 11th Annual Fertilizer Salesmen's Conference and Fertilizer Dealers' Short Course to be held Jan. 7-8 at Iowa State College here, has been announced by J. A. Stritzel, extension agronomist.

Themes of "Soil Fundamentals," "Yield Potentials" and "Fertilizer Use Outlook for 1959" will be foremost at the meetings.



Louis H. Wilson

Louis H. Wilson Wins National Service Award

CHICAGO, ILL.—Members of the National Association of Television and Radio Farm Directors have conferred their highest honor, the Meritorious Service Award, on Louis H. Wilson, secretary and director of information of the National Plant Food Institute, Washington.

Robert C. Miller, director of the farm department, Station WLW in Cincinnati, and president of the association, presented the award at the organization's 15th annual convention at the Conrad Hilton Hotel in Chicago.

The award, the second to be presented in the history of the organization, consisted of a handsomely engraved plaque. In presenting the award Mr. Miller said that Mr. Wilson was overwhelmingly nominated. He paid tribute to the fact that Mr. Wilson is "repeatedly behind the scenes without any way of receiving recognition for it, helping our association," and added, "I personally feel a bit guilty in accepting credit for many things I have done this past year as president of NATRFD because, in truth, this man provided the idea, cleared the way or did the service himself."

Mr. Wilson was the recipient of the Reuben Brigham Award in 1955 for meritorious service to agriculture, awarded as the highest honor by the American Association of Agricultural College Editors.

In 1957 he was honored by the 4-H clubs of the U.S. in appreciation of outstanding contributions to the development of the 4-H club program. Previously he was made an honorary lifetime member of the American Agricultural Editors Assn. in recognition of the outstanding service he had rendered American agricultural journalism and country life.

CORN PROGRAM

(Continued from page 1)

than 65% of parity (for the 1959 crop, it is estimated that the average support price will be between $1.12 and $1.15 bu.).

The new program dispenses with commercial and non-commercial producing areas. Corn produced anywhere in the U.S. that meets quality and storage requirements will be supported at the same national average level.

The program in effect for 1958-crop corn providing for acreage allotments, a commercial corn-producing area, support in the commercial area ranging between 75 and 90% of parity depending on supply, and support in the non-commercial area at 75% of the commercial rate, was favored by 28.9% of the producers voting in the referendum.

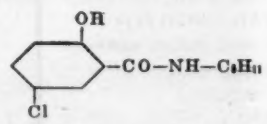
Industry Patents and Trademarks

2,861,877

Treatment of Sewage Sludge. Patent issued Nov. 25, 1958, to Cecil J. Geraghty, Redwood City, and Richard R. Kennedy, Palo Alto, Cal., assignors to Modoc Peat Moss Co., San Francisco. In the treatment of sewage sludge to form a compost, the improvement which comprises placing a layer of loose porous cellulosic material over a relatively flat bottom of a shallow reservoir provided with drainage, flooding the layer in the reservoir with sewage sludge containing from about 2% to about 15% by weight of solids to form a pool of sludge in the reservoir that is several times deeper than the layer but with the layer being at least one quarter of the depth of the pool, permitting the flooded layer in a quiescent state to drain by gravity while it is exposed to the air so that liquid is removed from the pool and the solids of the sludge filter into and impregnate the layer and are also composted, the drainage being continued until the impregnated cellulosic material can be tilled without sticking appreciably to the tilling tool, thereafter tilling the drained impregnated layer in place in the reservoir, and repeating the flooding and drainage steps described above in turn of the order of four times until the layer is impregnated with about 3 to about 5 parts by weight of sewage sludge for each part by weight of cellulosic material.

2,861,916

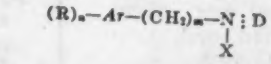
Fungicidal Composition Comprising 5-Chloro-Salicyclic Acid Amylamide. Patent issued to Ernst Model, Basel, and Jakob Bindler, Riehen, near Basel, Switzerland, assignors to J. R. Geigy A.-G., Basel, Switzerland. A fungicidal composition comprising as active ingredient a compound corresponding to the formula:



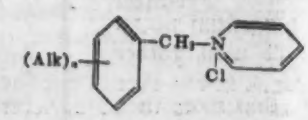
and a fungicidal adjuvant as a carrier therefor.

2,861,917

Method of Treating Endoparasitic Worms by Applying a Heterocyclic Quaternary Halide. Patent issued Nov. 25, 1958, to Milton Kosmin, Dayton, Ohio, assignor to Monsanto Chemical Co., St. Louis, Mo. The method of controlling endoparasitic worms which comprises applying to soils, plants and seeds susceptible to infestation by the worms a composition comprising a heterocyclic quaternary halide of the formula



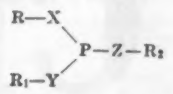
in which R is selected from the class consisting of alkyl and chloroalkyl radicals of from 1 to 20 carbon atoms, *n* is an integer of from 0 to 3, and the total number of carbon atoms in the total R radicals is less than 30, *Ar* is an aromatic hydrocarbon radical of from 6 to 12 carbon atoms, *m* is an integer of from 1 to 3, X is selected from the class consisting of chlorine, bromine and iodine and N:D represents a compound of the pyridine series consisting of pyridine, quinoline, isoquinoline and C-linked alkyl homologs thereof containing from 1 to 3 C-alkyl substituents, the number of carbon atoms in each of said C-alkyl substituents being from 1 to 2. The method of controlling nematodes which comprises applying to soils, plants and seeds susceptible to infestation by the nematodes a composition comprising a pyridinium chloride of the formula



in which the alkyl radical has from 1 to 20 carbon atoms and in which the total number of carbon atoms in the total alkyl radicals is less than 30, and *n* is a number of from 1 to 3.

2,861,912

Method for Combating Pests and Preparations Suitable Therefor. Patent issued Nov. 25, 1958, to Richard Sallmann, Binningen, Switzerland, assignor to Ciba Ltd., Basel, Switzerland. A method for combating insects which comprises applying to the objects which are to be protected against the insects an insecticidal amount of a chloral-phosphite ester condensation product said product being prepared by adding together 1 mol of chloral and 1 mol of a phosphite ester of the general formula



wherein each of R and R_1 represents a radical selected from the group consisting of saturated aliphatic hydrocarbon radicals containing 1 to 4 carbon atoms, phenyl radicals and chlorinated phenyl radicals, R_2 represents a saturated aliphatic radical containing 1 to 4 carbon atoms, X and Y are each a member selected from the group consisting of oxygen, nitrogen and sulfur, and Z is a member selected from the group consisting of oxygen and sulfur, thus forming a condensation product.

Production Men ... a Croplife bonus for you ... F-PPE

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JANUARY

S	M	T	W	T	F	S
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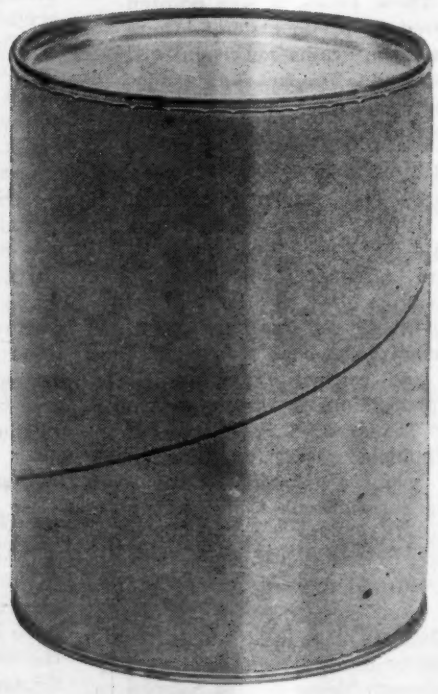

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by Myron E. Lusk, President and Research Director KALO Inoculant Company

Did you know that legume inoculants can be the most profitable line of products you and your dealers sell? For example, if we pack a private label inoculant line for you, your mark-up can range as high as 48% to 51%! Where else in this business can you make money like that?

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Mr. Myron E. Lusk, KALO INOCULANT COMPANY, Quincy, Illinois.

Please send me a sample can from your private label line of legume inoculants.

Name_____

Title_____

KALO INOCULANT COMPANY, Quincy, Illinois

Croplife®

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Midwestern states.

Texas Small Grain Suffers Loss from Plant Diseases

LOSSES brought about by plant diseases are sometimes surprisingly large. Frequently unspectacular, as compared for instance with a large infestation of grasshoppers, fungus diseases and other types of plant ailments, they are nonetheless potent loss-makers for many a grower.

Figures on losses for small grain producers in Texas, released recently by the Texas A&M College System, set the total at $15,471,000 for 1958. Harlan Smith, extension plant pathologist, said that rusts accounted for most of the losses but that blights and smuts were of considerable importance also.

Here are some of losses reported in the Lone Star State:

Wheat growers lost an estimated 6,410,945 bu.; oat producers 5,138,293 bu. and barley losses due to diseases were estimated at 193,821 bu. These losses, it was pointed out, were suffered by producers but others also lost because the grains never entered the channels of trade. Too, market grades of the harvested crops were lowered due to the plant diseases.

Mr. Smith said disease losses were overlooked by many growers in 1958 because of the high total state production. Rusts became established in south Texas on oats during the early part of the growing season and increased fairly rapidly during late fall and early winter. Cool weather during the spring season slowed the spread to the north. Light infections of wheat stripe rust developed in south and central Texas and later reached epidemic proportions in the major wheat areas of northwest Texas.

The plant pathologist suggested that small grain growers by using a combination of seed treatment and crop rotation could cut the losses. He also pointed out that some small grain varieties had resistance to the diseases and recommended that they be used in areas where adaptable.

The situation suggests strongly that seed treating chemicals should be more in demand than they are at present. Although Texas figures happen to be the ones quoted here, similar losses are counted in many areas of the U.S. each year. Here is an opportunity for stronger marketing and sales policies, come the 1959 season.

Further Market Seen for Fertilizer-Pesticide Mixes

THE MANNER in which tonnages of fertilizer-pesticide mixtures have increased in various regions of the U.S. and in total throughout the country was noted in the report just issued by the U.S. Department of Agriculture. (Croplife, Dec. 1, page 1) Comparative figures in some areas tell the story of wide acceptance, but at the same time show ample opportunity for further expansion.

Estimates made in 1950 indicated that 10,000 tons of fertilizer applied in the U.S. contained pesticides. In the 1952-53 fertilizer year, the total came to 87,100 tons. By the end of the next fertilizer year, 1953-54, the total had increased to 140,100 tons. Since then, fertilizer tonnage has fallen off and, with it, the use of pesticides with plant food. Total tonnage of fertilizer-pesticide mixtures in the U.S. for the 1955-56 year, latest in the USDA survey, came to 120,868 tons. Of this total, 109,956 tons were mixed fertilizers and 10,912 tons fertilizer materials.

Individual states accounting for major portions of the recorded tonnage were led by Iowa which used 23,180 tons, followed by Florida with 22,325, South Carolina with 14,424 and Illinois with 7,512 tons. These four states accounted for 55.8% of the national total of fertilizer-pesticide mixtures, the report pointed out.

Pesticide manufacturers recognize a potentially-increasing market in the use of various toxicants in fertilizers, while many fertilizer mixers are finding increased demand being put on them by growers interested in obtaining both plant food and soil pest control materials in the same package.

While reluctance still exists on the part of some fertilizer mixers toward introducing a toxicant into otherwise non-poisonous products, such objections seem to be weakening. Somewhat the same is true of state control officials who have found ways to handle the situation equitably, in fairness both to the manufacturer and the consumer.

Other factors helping to increase the popularity of fertilizer-pesticide mixtures include the aid offered by pesticide firms toward registration of products in states where sales are made, and in giving technical assistance to fertilizer mixers unaccustomed to handling insecticides.

The tabulation of plant food and pesticide mixes makes interesting reading for many in the trade already handling such products as well as many who may be toying with the idea of dipping their toes in the water next season with small tonnages.

USDA says it expects to continue making national surveys on this subject and it will be a matter of considerable interest to note how much further the trend will have gone when the next compilation is available. Statistical work of this nature does not lend itself to quick, easy arrival at totals, particularly when such a thorough report is made. Thus the industries involved must exercise some patience until the next report becomes available.

Farmers Say They Should Have Used More Fertilizer

FARMERS during the 1958 season used more fertilizer than they did in the previous year, according to various estimates, but they could have used much more profitably. At least, this is the consensus gained through a survey made in September by the research staff of Doane Agricultural Service which reports that almost 40% of all commercial farmers in the U.S. feel that they should have used greater amounts of fertilizer in 1958 than they actually did.

As opposed to the nearly 40% who thought they should have used more fertilizer, only 3.5% opined that they should have used less. About half of those contacted said they had used about the correct amount of plant food in 1958.

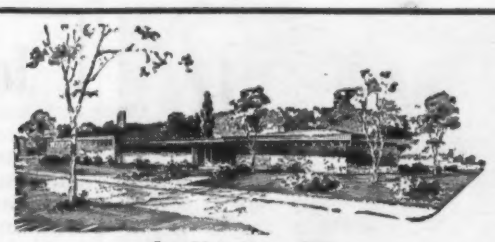
Other interesting findings reported in the survey included information on why these farmers had bought the grades of fertilizer they did, and why they applied the amount they did. According to the report, there were several important "spheres of influence" in deciding these questions. However, the major sources of outside influences were soil tests and county agents, state universities and experiment stations.

Soil tests, the results showed, appeared to have a slightly greater influence in determining the analysis of the fertilizer used, rather than the amount. The influence of county agents, state universities and experiment stations was about equal in each.

Other factors were also named in the Doane survey as having influence on the analysis used by the interviewed farmers. These included magazines, radio and other media, as well as the personal experience of the farmer himself. Fertilizer salesmen were also much more influential in determining analysis of the fertilizer used, rather than the amounts.

It seems odd, however, to note that more than

(Turn to EDITORIAL, page 27)



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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MEETING MEMOS

Dec. 12—Ohio Fertilizer & Lime Conference, Ohio State University, Columbus, Ohio.

Dec. 12—Ohio Soil Fertility Education Society, annual meeting, Ohio State University, Columbus, Ohio.

Jan. 13-14—Georgia Plant Food Educational Society, Annual Meeting, Georgia Center for Continuing Education, Athens, Ga., J. Fielding Reed, 710 Mortgage Guarantee Bldg., Atlanta, secretary-treasurer.

March 17—Western Agricultural Chemicals Assn. spring meeting, Hotel Miramar, Santa Barbara, Cal. C. O. Barnard, executive secretary.

Nov. 4-6—Fertilizer Industry Round Table, Mayflower Hotel, Washington, D.C. Dr. Vincent Sauchelli, National Plant Food Institute, chairman.

Meeting Memos listed above are being listed in this department this week for the first time.

Dec. 8-10—Chemical Specialties Manufacturers Assn., Annual Meeting, Commodore Hotel, New York.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

1959

Jan. 7-8—Fertilizer Short Course, Iowa State College, Ames.

Jan. 7-8—Fifth Annual Insect Control Conference, Mississippi State University, State College, Miss.

Jan. 7-9—Thirteenth Annual Northeastern Weed Control Conference, Hotel New Yorker, New York.

Jan. 12-13—Ohio Pesticide Institute, annual winter meeting, Neil House, Columbus, Ohio. J. D. Wilson, Secretary, Agricultural Experiment Station, Wooster, Ohio.

Jan. 20-22—California Weed Conference, Miramar Hotel, Santa Barbara, Cal.

Jan. 21-22—Northwest Agricultural Chemicals Industry Conference, Benson Hotel, Portland, Ore.; George Kitzmiller, Pacific Cooperatives, Portland, conference chairman.

Jan. 21-23—Western Cooperative Spray Project, Benson and Imperial Hotels, Portland, Ore.

Jan. 22-24 — Agricultural Aircraft Assn., Senator Hotel, Sacramento, Cal.; Wanda Branstetter, Chandler Field, Fresno, Cal., Executive Secretary.

Jan. 27-28—Nematology Workshop, Portland, Ore., sponsored by Shell Chemical Corp.

Jan. 27-28—Soil Science Society of North Carolina, Williams Hall, North Carolina State College, Raleigh.

Jan. 28-29 — Illinois Custom Spray Operators' Training School, 11th annual meeting, University of Illinois, Urbana.

Jan. 29—South Dakota Fertilizer Dealer Short Course, South Dakota State College, Brookings, S.D.

Jan. 29-30—Colorado Agricultural Chemicals Assn., Cosmopolitan Hotel, Denver. D. E. Garrison, Box 623, Greeley, Colo., secretary.

Feb. 10-12 — Agricultural Chemicals Conference, sixth annual meeting, Texas Technological College, Lubbock, Texas.

Feb. 12-13—Midwestern Agronomists-Fertilizer Industry Representatives, 11th annual meeting, Edgewater Beach Hotel, Chicago, Ill., sponsored by National Plant Food Institute.

Feb. 24-25—Alabama Pest Control Conference, Alabama Polytechnic Institute, W. G. Eden, Secretary-Treasurer, Alabama Association for Control of Economic Pests, Alabama Polytechnic Institute, Auburn, Ala.

June 9-10—Seventeenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Velda Rose Motel, Hot Springs, Ark.; Bruce Poundstone, University of Kentucky, Lexington, Ky., secretary-treasurer.

July 7-9 — Pacific Northwest Plant Food Assn., 10th Annual Regional Fertilizer Conerence, Tacoma, Wash.

ALABAMA SALES DOWN

MONTGOMERY, ALA.—Fertilizer sales in Alabama during the fiscal year Oct. 1, 1957 through Sept. 30, 1958, were down more than 66,000 tons from the previous year, reported A. W. Todd, commissioner, State Department of Agriculture and Industries. Totals for the year were 920,774.83 tons sold compared to 986,855.24 tons for the 1956-57 fiscal year.

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EDITORIAL

(Continued from page 26)

10% of the farmers contacted in the Doane survey use no commercial fertilizer at all. While this anomaly appears to offer a potential for new sales fields, it should be remembered that sales people can easily spend an undue amount of time trying to bring these farmers into the fertilizer-using fold, where their efforts might be exerted more profitably in servicing more knowledgeable customers.

Fertilizer salesmen, with whom we have discussed this matter, say that such farmers when at last persuaded to use fertilizer, waste their money on a skimpy application over the entire farm and thus get mediocre results. They then convince themselves that fertilizer is a fake and return to their old ways with a smugness growing out of the thought that "they can't fool me with that stuff." The 10% of non-users do not offer a first class market, although there are doubtless among them some who may catch on to the economics of plant food utilization some day.

The question of bulk vs. bagged goods was also covered in the questionnaire. Results showed that 81.3% of the farmers used bagged goods, while only 8.2% bought in bulk.

Numerous surveys are being made among farmers for all kinds of purposes, and the results of some of these are well known. Studies on motivations, on who influences the farmer, on what he buys and why, all help to give the supplier a better insight to the thinking of his customer.

The recent Doane survey, adding its light to earlier queries, lends more information on the enigma of how the farmer thinks.

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Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

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